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M.J. WOJCIECHOWSKI
M.L. McALLISTER

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MINERAL POLICY UPDATE 1984

POLICY AND PROGRAM CHANGES AFFECTING THE CANADIAN MINERAL INDUSTRY

by

Margot J. Wojciechowski
and
Mary Louise McAllister

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FOREWORD

This update looks at federal and provincial government initiatives and major program changes introduced during 1984. Although all the information contained here is in the public domain, the update collects it from a variety of sources and organizes it by jurisdiction and subject matter. It is hoped that the presentation of this material under a single cover and in a timely manner will be of value to a variety of users.

The work is intended as a reference and guide to further information sources for all who are dealing with the interfaces between the Canadian mineral industry and the federal and provincial governments. It is also intended to stimulate feedback to the Centre for Resource Studies in the form of comment and information that will enhance the usefulness of future editions of the update.

This study owes much to the information and guidance provided by officials from many federal and provincial government departments and agencies, as well as from mining associations in several jurisdictions. The Canadian Tax Foundation has consented to the use of material from several of its publications in the sections on taxation matters.

While the authors are grateful for the help and cooperation received, they take responsibility for any errors of fact or interpretation.

Margot J. Wojciechowski
Centre for Resource Studies

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SUMMARY OF MAJOR INITIATIVES

Federal

The federal government concluded negotiations of mineral subagreements under Economic and Regional Development Agreements in Manitoba (1983), Newfoundland, Saskatchewan, Nova Scotia, and New Brunswick. A total of almost $65 million in federal funding over the next five years was committed under these programs. Negotiations for additional agreements were continuing at year end with British Columbia, Ontario, Quebec, and the Yukon.

Attempts to privatize Eldorado Nuclear continued in 1984. Uranium Canada Limited, the agent for sales from the federal government's former uranium stockpile, will be dissolved.

The Geological Survey of Canada moved into major offshore activities, with its Frontier Energy Science program and participation in the international Ocean Drilling Program.

The Department of Employment and Immigration introduced the Modified Industry and Labour Adjustment Program (MILAP) to assist single-industry communities affected by shut-downs and closures.

A revised version of the Canada Labour Code came into effect in June 1984. The code applies only to workers under federal jurisdiction, but also serves as a model for some provincial legislation.

EMR has completed and published studies on nickel, copper, lead, and zinc, as part of its strategic review of the nonferrous smelting industry.

Legislation was introduced to replace the Foreign Investment Review Agency (FIRA) with Investment Canada, and to simplify the review process for direct foreign investments.

The Department of Fisheries released a controversial discussion paper proposing a new management policy for fish habitats.

In international trade, interest has focused on increasing threats of U.S. protectionism in steel, copper, asbestos, and uranium, and on issues of market access in general.

Yukon and Northwest Territories

Federal Initiatives

The Department of Indian Affairs and Northern Development continued with its Northern Mineral Policy Review, releasing three background papers in 1984 and a discussion paper on The Northern Mineral Sector early in 1985.

A comprehensive review of northern mining regulations was undertaken by the Department of Indian Affairs and Northern Development, and changes were proposed to the Canada Mining Regulations, the Northern Inland Waters Act, and the Territorial Coal Regulation and Quarrying Regulation.

Amendments were made to the Yukon Quartz Mining Act, simplifing the staking of claims and overcoming difficulties presented by the previous eight-claim limit.

Studies concerning the regulation of placer mining continued.

The operations, mandate, and rate structure of the Northern Canada Power Commission were under review during the year.

Discussions of means to assist Cyprus Anvil to return to profitable production continued, with a focus on transportation issues.

Government of the Northwest Territories

The GNWT is developing its own mineral policy for the Northwest Territories. It also introduced the Renewable Resource Compensation Policy to deal with economic responsibility for the impact of resource development. The new Mining Safety Ordinance was introduced.

British Columbia

Major changes were made to the review and approval process for new mines or expansions of existing mines, including a fast-track process for some projects.

The report of the public inquiry on the Quinsam coal project, part of stage II of the approval process, was released. This was the first public inquiry under B.C.'s approval process.

Trade missions in support of mineral exports were undertaken by provincial ministers, who visited Australia, India, China, Malaysia, Indonesia, Thailand and Scandinavia.

The entire provincial tax regime in British Columbia is under review. A white paper has been issued, and discussions were held throughout the province.

Alberta

The Metallic Minerals Regulation was introduced, replacing the Quartz Mining Regulations.

New Crown royalty regulations for metallic minerals were drafted.

Revisions to the province's coal development policy are in preparation.

Saskatchewan

The province will contribute $3.19 million towards the $6.38-million federal/provincial mineral development agreement.

Replacement of the Mineral Resource Act by the Crown Minerals Act and the Mineral Resource Act 1985 was proposed in 1984 and implemented in 1985.

Amendments to the Mineral Disposition Regulations 1961 are in the course of preparation, as are the new Coal Disposition Regulations.

New Potash Resource Payment Agreements are expected to be in place by 1986. In the meantime, 2-year interim agreements have replaced the old agreements, which expired in 1984.

Manitoba

The province's contribution to the federal/provincial mineral agreement signed in 1983 will be $9.9 million, 40 percent of the total.

A provincial delegation looking into potential potash markets visited China, South Korea, and India.

Manitoba's Labour Relations Act was revised in 1984.

Ontario

The Ministry of Natural Resources opened its new Geoscience Data Centre in Toronto. The Centre's facilities include 25,000 exploration reports, 7,000 mineral deposit files, and 3 computer data bases dealing with Ontario geoscience and mineral information.

Bill 129, amending the Mining Act, was in the process of discussion and revision in 1984.

The Royal Commission looking into health and safety in the use of asbestos in Ontario tabled its final report and recommendations.

The new Workers' Compensation Act passed late in 1984 introduced increased assessments for employers.

The government announced that work is in progress on a discussion paper reviewing taxation in the mining sector.

Quebec

The Mineral Exploration Financial Assistance Program was introduced in 1984, and the Private Investments Acceleration Program, begun in 1983, continued to assist the private sector as well.

Tougher antipollution regulations were introduced by the Quebec government, which also pledged $1.2 million towards a feasibility study for modernization of Noranda's Rouyn smelter.

The government announced that major changes to the Mining Duties Act will be introduced in 1985.

New Brunswick

Under the federal/provincial mineral development agreement, the province will contribute $7.3 million of the $22.7 million total.

Revisions to the Mining Act were in progress during the year.

Changes to the Metallic Minerals Act, including a graduated tax on profits, were introduced in April, deferred later in the year, and withdrawn early in 1985.

The entire provincial tax system is also under review.

Nova Scotia

Nova Scotia will contribute $10.8 million towards the $27-million federal/provincial mineral development agreement.

The moratorium on uranium exploration continued in effect throughout 1984.

The province is reviewing both provincial and municipal taxation, and the effect of taxation on the investment environment.

Newfoundland

The province's contribution to the $22-million federal/provincial mineral agreement will be $6.6 million.

The province will spend $2 million to assist redevelopment of the St. Lawrence fluospar deposits.

RESUME DES PRINCIPALES INITIATIVES

Initiatives fédérales

Le gouvernement fédéral a conclu des sous-ententes minères dans le cadre des Ententes de développement régional et économique avec le Manitoba (1983), la Terre-Neuve, la Saskatchewan, la Nouvelle-Ecosse et le Nouveau-Brunswick. Le montant des fonds fédéraux engagés pour ces programmes pour les cinq prochaines années est de presque $65 millions. Des négociations pour d'autres sous-ententes étaient également encourse à la fin de l'année avec la Colombie-Britannique, L'Ontario, le Québec et le Yukon.

Les tentatives de privatiser Eldorado Nuclear se sont poursuivres en 1984. Uranium Canada Limitée, l'agent pour les ventes d'anciennes réserves d'uranium du gouvernement fédéral, sera dissoute.

La Commission géologique du Canada s'est lancée dans d'importantes activités sous-marines avec son Programme scientifique de l'énergie frontalière et sa participation au Programme international de forage sous-marin.

Le ministère de l'Emploi et de l'Immigration a créé le Programme d'aide à l'adaptation de l'industrie et de la main-d'ouvre modifié (PAAIM) pour venir en aide aux communautés à industrie unique ayant des difficultés à cause des arrêts de travail et des fermetures.

Une version révisée du Code canadien du travail est entrée en vigueur en juin 1984. Le code ne s'applique qu'aux travailleurs sous juridiction fédérale, mais sert aussi de modèle à de la législation provinciale.

EMR a terminé et publié des études sur le nickel, le cuivre, le plomb et le zinc dans le cadre de sa revue stratégique des fonderies non ferreuses.

Un projet de loi a été déposé pour remplacer l'Agence d'examen de l'investissement étranger (AEIE) avec Investissement Canada dans le but de simplifier le mécanisme d'examen des investissements étrangers directs.

Le ministère des Pêches a publié un document du travail controversé proposant une nouvelle politique de gestion des habitats des poissons.

En commerce international, on s'est préoccupé de la menace croissante du protectionnisme américain en ce qui concerne l'acier, le cuivre, l'amiante et l'uranium et de questions générales relatives à l'accès aux marchés.

Yukon et Territoires du Nord-Ouest

Initiatives fédérales

Le ministère des Affairs indiennes et du Nord a continué son examen de la politique minerale dans le Nord, publiant trois documents de référence en 1984 et un document de travail sur le secteur minéral du Nord au début de 1985.

Un examen complet des Réglements miniers du Nord à été entrepris par le ministère des Affaires indiennes et du Nord et des modifications ont été proposées pour les Réglements miniers du Canada, pour la Loi sur les eaux intérieures du Nord et les Réglements sur l'exploitation des houillères territoriales et sur les carrières.

La Loi sur l'extraction du quartz dans le Yukon a été modifiée de façon à simplifier la revendication de concessions minières et à surmonter les difficultés que présentait l'ancienne limite à huit concessions.

On a continué à étudier les Réglements sur l'extraction de l'or.

Les transactions, le mandat et la structure des tarifs de la Commission d'énergie du Nord canadien ont été examinés au cours de l'année.

Les discussions se sont poursuivies sur les moyens disponibles pour aider Cyprus Anvil à atteindre un niveau de production rentable et on s'est attardé surtout sur les questions de transport.

Gouvernement des Territoires du Nord-Ouest

Le GTNO élabore actuellement sa propre politique minérale pour les Territoires du Nord-Ouest. Il a aussi présenté sa politique de rémuneration pour les ressources renouvelables dans le but de statuer sur la responsabilité économique pour l'impact de la mise en valeur des ressources. Le nouveau Décret sur la sécurité minière a été adopté.

Colombie-Britannique

On a considérablement modifié le processus d'examen et d'approbation des nouvelles mines et de l'extension des mines existants, ce processus étant accéléré pour certains projects.

On a publié le rapport de l'enquête sur le project houiller Quinsam, qui en était à la phase II du processus d'approbation. C'était la première enquête publique dans le cadre du processus d'approbation de la C.-B.

Les ministres provinciaux se sont rendus en Australie, en Inde, en Chine, en Malaisie, en Indoniésie, en Thailande et en Scaninavie avec la mission de soutenir les explortations de minéraux.

On examine actuellement le système fiscal provincial entier. Un livre blanc a été publié et des discussions ont eu lieu à travers toute la province.

Alberta

On a adopté les Réglements sur les minéraux métalliques remplaçant les Réglements sur l'extraction du quartz.

Les nouveaux Réglements sur les redevances sur les minéraux métalliques payables à la Couronne ont été rédigés

Des révisions de la politiques provinciale d'exploitation des houillères sont en préparation.

Saskatchewan

La part contributive de la province aux $6.38 millions de l'entente de développement minéral fédérale/provinciale sera de $3.19 millions.

En 1984 on a proposé de remplacer la Loi sur les ressources minérales par la Loi sur les minéraux de la Couronne et la Loi sur les ressources minérales de 1985. Ces lois sont entrées en vigueur en 1985.

On se prépare à modifier les Réglements sur l'écoulement des minéraux de 1961 ainsi que les nouveaux Réglements sur l'écoulement du charbon.

On s'attend à ce que de nouvelles ententes de paiement des ressources en potasse soient en place d'ici 1986. Entretemps des ententes intérimaires de 2 ans ont remplacé les anciennes ententes qui expiraient en 1984.

Manitoba

La contribution de la province à l'entente de développement minéral fédéerale/provinciale signée en 1983 sera de $9.9 millions, soit 40 pour cent du total.

Une délégation provinciale s'est rendue en Chine, en Corée du Sud et en Inde pour étudier les marchés potentiels de la potasse.

La Loi sur les relations de travail du Manitoba a été révisée en 1984.

Ontario

Le ministère des Ressources naturelles a ouvert son nouveau Bureau d'information sur les sciences géologiques à Toronto. Le Bureau contient 25 000 rapports sur l'exploration, 7 000 dossiers sur les gisements de minéraux et 3 bases de données informatisées portant sur les minéraux et la science de la terre en Ontario.

On discutait en 1984 du projet de loi 129 qui doit modifier la Loi sur les mines.

La Commission royale étudiant la question de la santé et de la sécurité dans l'utilisation de l'amiante en Ontario a déposé son rapport final et ses recommandations. La nouvelle Loi sur les accidents du travail adoptée en 1984 comprend une augmentation des contributions payées par les employeurs.

Le gouvernement a annoncé qu'on préparait un document de travail sur la fiscalité dans le secteur minier.

Québec

Le Programme d'aide financière à l'exploration minérale a été créé en 1984 et le Programme d'accélération des investissements privés, créé en 1983, a continué à venir en aide au secteur privé.

Le gouvernement du Québec a adopté des réglements antipollution plus sévères et a engagé $1.2 millions pour une étude des possibilités sur la modernisation de la fonderie de Noranda à Rouyn.

Le gouvernement a annoncé que des modifications de la Loi de l'impôt sur l'exploitation minière seraient déposées en 1985.

Nouveau-Brunswick

Dans le cadre de l'entent de développement minéral fédérale/provinciale, la province contribuera $7.3 millions du montant total de $22.7 millions.

Des révisions de la Loi sur les mines étaient en cours.

Des modifications de la Loi sur les minéraux métalliques, y compris un impôt progressif sur les profits, ont été déposées en avril, différées plus tard dans l'année et retirées au début de 1985.

On révise également le régime fiscal entier de la province.

Nouvelle-Ecosse

La part contributive de la Nouvelle-Ecosse aux $27 millions de l'entente de Développement minéral fédérale/provinciale sera de $10.8 millions.

Le moratoire sur l'uranium était toujours en vigueur en 1984.

La province examine le régime fiscal provincial et municipal, en particulier les effets des impôts sur les investissements.

Terre-Neuve

La part contributive de la province aux $22 millions de l'entente de développement minéral fédérale/provinciale sera de $6.6 millions.

La province dépensera $2 millions pour aider la remise en valeur des gisements de fluorine du Saint-Laurent.

1. INTRODUCTION

This study is a summary of the major program and policy initiatives introduced by the federal, provincial and territorial governments of Canada in 1984 that affect the Canadian mineral industry. Since the information is aimed at individuals who are already familiar with government policies affecting the mineral industry, it touches only on changes and new activities introduced over the year, rather than ongoing and unaltered programs. All the information is in the public domain; policies still in the development stage are included only if they are already in the process of public discussion. A minimum of detail is provided, as it is expected that readers will go to the appropriate government sources for in-depth information on areas that are of particular interest.

For the purpose of the update, the mineral industry is defined as the industrial sector engaged in mineral exploration and development, and production and marketing of metallic minerals, industrial minerals, coal and uranium. Oil and gas are excluded. Each jurisdiction, federal and provincial, is given a separate section. For the territories, both federal and territorial initiatives are described in chapter 4, immediately following chapter 3 on the federal government.

Where available, a general policy statement from the appropriate minister or department introduces the sections on the respective governments. The specific programs and policies are arranged under the following headings as far as possible:

1. Direct Investment or Equity Participation
   - Crown corporations and other government agencies;
   - joint ventures.

2. Assistance to the Mineral Industry
   - direct financial assistance;
   - federal/provincial programs;
   - exploration assistance;
   - mining equipment manufacturing sector;
   - human resources assistance;
   - research and information;
   - infrastructure.

3. Regulation of the Mineral Industry
   - mineral rights;
   - mining;

- environment;
- health and safety;
- financial regulation;
- foreign ownership.

4. Marketing and International Trade

5. Taxation Matters Affecting the Mineral Industry
   - corporate income tax
   - personal income tax
   - mining taxation and royalties
   - retail sales tax

While certain policies could be classified under more than one heading, we have tried to place each under the heading we feel to be the most relevant. Those policies involving more than one government, are, in most cases, listed under all the governments involved.

2. 1984 IN REVIEW

The Canadian mineral industry showed continuing signs of recovery in 1984, following its sharpest downturn ever in 1982, and a modest recovery in the second half of 1983. Value of production of minerals for 1984 (excluding oil and gas) was $14.8 billion, an increase of over 15 percent from the 1983 total of $12.8 billion.

The greatest improvement was recorded by nickel, which increased almost 50 percent over 1983 in terms of value of production. This reflected both a 40-percent increase in volume and a slight improvement in price. Coal, the leading mineral in terms of value, showed a volume increase of almost 27 percent, and a 39.1-percent increase in the value of production. Iron ore, on the other hand, increased in volume by almost 25 percent but in value by only 15.8 percent.

Among the other metals with improved value of production were zinc (up 26.7 percent), uranium (up 37.2 percent), lead (up 18.9 percent) and molybdenum (up 24.2 percent). Canada overtook the USA as the world's leading producer of uranium. Nonmetallics, led by a 34.4-percent increase in value of production for sulphur, increased by 21 percent.

The price of gold fell below $300 US by the end of the year, threatening high-cost lode gold producers, reducing the benefits to base metal producers with gold byproducts, and leading to an overall drop in value of production of 0.2 percent, in spite of a volume increase of over 10 percent. Falling copper prices produced a similar pattern, with increased volume and a drop of about 1 percent in value. The major slide was recorded by silver, which fell by almost 25 percent in value of production.

A number of mining firms returned to a profitable condition over the year, reflecting improvements both in value of production for some minerals and in productivity for some producers.

Turning from industry performance to mineral policy initiatives, the major current of change in policies in 1984 involved provincial reviews of mining taxation. Changes were under consideration or implemented in British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, and Nova Scotia.

3. FEDERAL GOVERNMENT

Introduction

Originally, under the provisions of the 1867 British North America Act and now under the Constitution Act 1982, mineral resources in Canada belong to the provinces in which they occur. As a result of this fact, the federal government plays at least a dual role with respect to mineral policy and other activities affecting mineral development. First, as custodian of the northern territories and owner of the minerals contained therein, it acts like a provincial government, with the full range of associated responsibilities. The leading department in this role is Indian Affairs and Northern Development. Federal policies and activities affecting the territories, i.e. almost all of Canada north of 60 degrees, are given in chapter 4, along with the activities of the territorial governments.

This chapter concentrates on the second aspect of federal activities that affect the mineral industry in all parts of Canada, arising from a federal coordinating role elaborated in the Resources and Technical Surveys Act, and from policy, advisory, and regulatory responsibilities other than those based on ownership of the resources. These responsibilities, usually exercised by Energy Mines and Resources (EMR) and other line departments, include such areas as the regulation of trade and commerce, national security, atomic energy, taxation, technology development, navigation, shipping and inland waters, banking, regional disparity, and undertakings involving more than one province. For example, under the Canada Explosives Act, EMR has sole jurisdiction over the regulation of manufacture, importation, transportation, and storage of explosives for all of Canada. In other areas, such as the use of explosives in mines, health and safety, environment, trade, etc, EMR advises and cooperates with provincial and federal regulatory agencies.

The nature and intensity of federal involvement in Canadian mineral activities is an important factor in the economic condition of the industry. The government's impact on the industry's profitability can be felt in a positive way, as a consequence of direct grants or services, or in a negative way, through, for example, taxation and regulatory requirements. Concern over the industry's continuing economic difficulties in 1984 was reflected in the federal government's apparent reluctance to impose new taxation or regulatory burdens over the year, and its interest

in identifying areas for constructive assistance to improve or at least protect the industry's competitive position.

A major event of interest to policy watchers in 1984 was the change of government from Liberal to Conservative. The new Prime Minister, Brian Mulroney, stated shortly after assuming office that his government would 'continue to view mining as a pillar of the economy'. The new Minister of State for Mines, Robert Layton, identified a number of specific initiatives under consideration by the government that were expected to improve the economic environment for mining. These included continuing of the government's attempts to remove nontariff barriers to Canadian mineral exports, replacement of the Foreign Investment Review Agency with Investment Canada, changes to the National Energy Policy, improving portability of benefits and skills across Canada, review of the unemployment benefits system, and encouragement for technical innovation.

Under the Liberal government and continuing through the change of power, a major activity over the year was the ongoing negotiations with the provinces of the Economic Regional Development Agreements (ERDAs), replacing the General Development Agreements which expired in March 1984. A number of the new ERDAs have been followed by subagreements for mineral development, involving federal as well as provincial expenditures on a variety of mineral-related activities.

Other areas receiving extensive federal attention over the year included acid rain controls, smelter emissions, and effects of emission controls on the existing industry, as well as matters related to international trade and market access for Canadian minerals.

EMR Mineral Policy Initiatives

Over the two fiscal years 1983/84 and 1984/85 which straddle this Update's 1984 focus, EMR's mineral policy initiatives have included development of an asbestos strategy (including establishment of the Asbestos Institute), a strategic study of nonferrous smelting (with two subsequent reports, one on copper and nickel, and a second on lead and zinc), a multi-year analysis of Canadian and foreign taxation affecting mineral producers, and a pilot project aimed at developing a national data base on accidents in mining and the mineral industry.

Future plans identified in the 1984/85 estimates involve continuing consultations with the federal Interdepartmental Advisory Committee on National Mineral Policy, the fed-

eral/provincial Intergovernmental Working Group on the Mineral Industry, and private-sector individuals and organizations, including business and labour groups, academics and independent researchers. These consultations are aimed at identifying policy issues and needs and developing effective mineral policies. Strategy papers for specific commodities and mineral issues are planned, as well as studies of certain imported minerals, manpower issues, health and safety, the economic impact of fiscal policies on the Canadian mineral sector, the financial status and performance of the Canadian mineral industry, and costs and benefits of actual and proposed federal governmental expenditures in support of the industry. Work will also continue on finalizing the remaining mineral development agreements with those provinces that want them.

Direct Investment or Equity Participation

Cape Breton Development Corporation

The Cape Breton Development Corporation (CBDC) is a federally-owned coal producer in Nova Scotia. In the spring, CBDC and the Nova Scotia Power Corporation reached a 5-year agreement on coal supply for thermal generation. The pricing agreement is part of a 35-year pact, due to expire in 2010.

Following a fire at CBDC's number 26 colliery at Glace Bay which put 1,100 miners out of work, the federal government announced that it would commit $300 million to work on a number of Cape Breton facilities: $237 million is aimed at starting up the Lingan-Phelan colliery and expanding the Victoria Junction coal preparation plant; $24 million will be used to complete an exploratory tunnel to the Donkin-Morien mine reserve (development of the mine and a new line from No. 26 colliery would cost $500 million each to complete); $64 million will go towards the construction of a wash plant and railway loading dock at the Prince mine in the Sydney coal field area. The investment is expected to provide many new construction jobs, as well as 1,000 permanent jobs.

In September, it was announced that CBDC's development division was to be restructured and would adopt new policies and procedures. The changes were a result of management's efforts to make better use of financial resources. Of $52.9 million spent by the industrial division in the past 5 years, only $4.2 million (8.2 percent) went for new industrial development, while $11.2 million (21.7 percent) was spent on administration.

CBDC's investigation into a proposal from the United Mine Workers to reactivate the 1B colliery entered phase two, which involved evaluation of capital and operating costs. Phase one of the project, which involved work on the roadways, has been completed at a cost of $165,000.

Eldorado Nuclear

Early in the year, the chairman of Westmin Resources, Paul Marshall, was brought in by the Canada Development Investment Corporation (CDIC), to assist in its efforts to sell some of its assets to the private sector. Some preliminary negotiations were carried out between CDIC and the British Columbia Resources Investment Corporation (BCRIC) regarding CDIC's entire package of companies, but BCRIC withdrew from the bidding in November.

Eldorado Nuclear, one of CDIC's principal investments and included among the assets up for sale, continued to suffer from soft uranium markets. Its long-term debt has increased to almost $600 million. Sale of Eldorado to the private sector had been under consideration before the change of government, as well.

Uranium Canada Limited

Uranium Canada Limited, a federal Crown corporation, was established in 1971, initially to manage the governments' interest in the joint Canada/Denison uranium stockpile, and later to act as agent of the federal government for sales of uranium from the Government of Canada general stockpile. The company has been inactive since 1981, when its assets were transferred to Eldorado Nuclear Limited. In December 1984, Cabinet approved the company's corporate plan to wind up its affairs and dissolve the company.

Assistance to the Mineral Industry

Direct Grants to the Private Sector

On 22 August 1984, the federal government announced a grant of $1.5 million to Laurentian University in Sudbury, to establish a Mining Development and Mineral Exploration Research Centre. The objectives of the Centre include:

- the design, development and testing of new equipment, models and methods in mineral exploration;
- research and development in the physical and chemical properties of metals and minerals, in order to improve techniques for drilling, dynamiting, mine construction, extraction, and utilization;
- evaluation of the effects of public policy, political risk, and economic factors on the investment climate and future pricing of selected commodities;
- research into health and safety in mines;
- study of the impact of the industry on the environment.

The federal government was considering a request from Cominco Ltd. for a grant of $60 million under the Industrial and Regional Development Program, for a proposed $140-million expansion of its lead smelter in Trail, B.C. A decision was still pending at year end.

The federal government promised an interest-free loan of $700,000 to Continuous Mining Systems (CMS) in Sudbury. Established by Inco, the company is developing equipment for use in bulk mining methods. The company has already developed a blasthole drill, continuous mucking loader and remote controlled locomotive which are in use in Inco facilities. The company hopes to market its equipment to other producers in addition to Inco.

A $25-million four-year contract to do a survey of 890,000 line kilometres in Thailand was awarded to Kenting Earth Sciences (Timac Corporation). Notable for being the largest airborne survey of its kind, in both financial and geographic terms, the project was funded by the Asian Development Bank, the Canadian International Development Agency, and the Thailand government (Northern Miner, Sept. 20, 84).

Federal-Provincial Agreements

In 1983 the federal government began discussion with each of the provinces on new Economic and Regional Development Agreements (ERDAs) to replace the General Development Agreements that expired in March 1984. Responsibility for the provincial ERDAs was with the Ministry of State for Economic and Regional Development (MSERD), but that ministry ceased to exist in mid-1984, so the task has been transferred to a newly established office of Regional Devel-

opment in the Department of Regional Industrial Expansion (DRIE). Equivalent agreements with the territories will be administered by DIAND. These discussions were continued in 1984, and agreements were in five cases followed by 5-year subagreements for mineral development. The mineral subagreements are the responsibility of EMR, and focus on 3 principal areas:

i geoscience studies (federal input by the Geological Survey of Canada)
ii studies in extraction and processing technology (federal input by CANMET)
iii market and feasibility studies (federal input by the Mineral Policy Sector of EMR)

All the agreements signed in 1984 identify, as their principal objective, strengthening and diversifying the mineral industry sector of the provincial economy.

With one exception within the Newfoundland agreement, all provide for separately funded and delivered programs from the federal and provincial agencies involved. Each of the programs will be coordinated by a separate management committee, with federal and provincial representatives. The Newfoundland program is unique, in that it includes a jointly funded geological mapping program, which will be delivered by the province.

Mineral Development Agreements signed by the end of 1984 were as follows.

Manitoba

The Manitoba agreement was the first to be signed, and a full geoscience program was begun in 1984. The total funding for the program is $24.7 million over 5 fiscal years split 60:40. The federal share will be $14.8 million, and the province will contribute $9.9 million. The programs include:

Geoscience ($8 million federal, $5 million provincial)
- Geological investigations: Precambrian geological mapping and 'scout' drilling.
- Mineral investigations: known base and precious metal deposits, and industrial minerals.
- geophysical surveys: airborne and ground.
- geochemcial surveys and glacial prospecting.
- geological compilation and information.

Mining and Minerals Technology ($4.7 million federal, $2.8 million provincial)

- Mining technology: computer-assisted design for underground mines.
- Mine safety and productivity: ground control, communications, and cumulative exposure index.
- Mineral processing technology: SO_2 emissions, milling technology, tailings research, industrial minerals research.

Economic Development Studies ($885 thousand each, federal and provincial)

- Commodity market studies.

Public Information, Evaluation and Administration ($1.25 million each)

Newfoundland

This agreement was signed on 4 May 1984 and, as noted above, includes a jointly-funded geological mapping component, to be carried out by the province. This feature recognizes the interest of both governments in the mapping studies, as well as the expertise in this area that has been built up in the provincial department. The rest of the programs will be funded and delivered separately, either by EMR or by the province. The federal contribution will be $15.4 million and the provincial share is $6.6 million, for a 70:30 split of the $22 million total, spread over 6 fiscal years. The following programs will be included.

Geoscience ($7.95 million federal, $1.95 million provincial)

- Known deposits: investigations in the area of selected significant deposits, mines, and former mines.
- Geophysical investigations in areas of potential.
- Geochemical investigations to identify areas of potential.
- Investigations of western Newfoundland bedrock formations, glacial overburden and dispersion, and sand gravel deposits.
- Jointly-funded mapping: chiefly bedrock mapping in areas of known or anticipated mineral potential, plus industrial minerals investigation ($3.3 million each).

Mining and Minerals Technology ($1.5 million federal, $600 thousand provincial, plus industrial cooperation and possibly support)

- Assessment of known mineral deposits, including economic and market studies.
- Concrete alkali studies.
- Iron ore pelletizing: testing of new indigenous materials for use in forming iron ore pellets.

Economic Development Studies ($1.25 million federal, $250 thousand provincial)

- Industrial mineral studies: particularly barite, building stone, clays, dolomite and limestone, gypsum, pyrophyllite and talc.
- Competition and productivity studies: for nonferrous and other minerals.

Saskatchewan

Signed 16 May 1984, the Canada-Saskatchewan Mineral Development Agreement will provide $6.38 million in funds: $3.19 million federal and $3.19 million provincial, spread over 6 fiscal years. The programs include the following.

Geoscience ($2.2 million federal, $3.14 million provincial) with a focus on gold and, to a lesser extent, base metals, in order to diversify the mineral base in northern Saskatchewan.

- Mineral deposit and geological investigations (gold and base metals.
- Geophysical and geochemical surveys.
- Gold belt geology: regional surveys and technological sampling.
- Industrial minerals assessment.
- Regional biogeochemical method and surveys: a new technique, to be used here mainly in the gold belts.

Minerals Technology Program ($400 thousand each)

- Technological evaluation of metallic deposits.
- Technological evaluation of industrial minerals.

Economic Development Studies ($400 thousand each)

- Clay industry improvement and development.
- Building stone evaluation and promotion.
- Other industrial minerals.

Public Information, Evaluation and Administration ($190 thousand federal, $50 thousand provincial)

Nova Scotia

This agreement was signed 11 June 1984. Total funding over 6 fiscal years will be $26.945 million, divided 60:40, i.e. federal share of $16.125 million and a provincial share of $10.82 million. The following programs are included.

Geoscience ($8.955 million federal, $7.905 million provincial)

- Sedimentary basin: studies of geological environment for such minerals as copper, lead, zinc, uranium, coal and oil shales, both on land and offshore.
- Mineral sector: studies of known deposits; regional geological, geophysical and geochemical studies.
- Support for access to exploration data.

Minerals Technology Sector ($3.27 million federal, $1.635 million provincial)

- Commodity - specific studies: mineral processing, beneficiation and metallurgy studies for a broad range of industrial minerals plus some metallic minerals.
- Industrial minerals testing equipment.

Development Studies ($895 thousand federal, $240 thousand provincial)

- Market and feasibility studies: chiefly for industrial minerals, plus tin.

Firm-Specific Programs

- Firm-specific assistance: up to 50 percent of costs of industrial minerals marketing studies.
- Productivity audit: to assist firms in productivity audits and development of recommendations for improvement.

Public Information, Direct Technology Transfer, Management and Administration ($1.7 million federal, 1.04 million provincial)

New Brunswick

The agreement was signed 26 June 1984, with a total funding over 6 fiscal years of $22.307 million, divided into $15 million federal and $7.307 million provincial, a ratio of 67.2:32.8. The programs will be as follows.

Geoscience ($8.5 million federal, $3.873 million provincial)

- Metallic mineral deposits: studies of selected known deposits.
- Regional geology.
- Geochemistry and geophysics.
- Surficial geology and till geochemistry: including tracing back to bedrock sources.
- Geoscientific data compilation and publication, expansion of drill core storage, and indexing of stored core.

Mining and Minerals Technology Program ($3 million federal, $275 thousand provincial)

- Ferric chloride leach process: for complex sulphide ores - small pilot plant.
- Commodity-specific studies: manganese, aggregates, potash (mineralogy and backfill techniques).
- Dewatering evaluation, coal.
- Peat geochemistry.

Economic Development Program ($2 million federal, $2.861 million provincial)

- Government initiated studies: manganese market review, processing opportunities for base and other metals, commodity studies, resource management strategies.
- Firm-specific assistance: product marketing studies and productivity audits.

Public Information, Evaluation and Administration (1.5 million federal, 298 thousand provincial)

ERDAs were signed before the end of 1984 with the Ontario, Quebec and British Columbia governments, but mineral agreements with those provinces and the Yukon were still under discussion at the year end.

Programs under the agreements have been designed in a process of consultation with each of the provincial departments involved and with agencies of EMR (GSC, CANMET, and the Mineral Policy Sector). Discussions with industry have taken place as well.

Research Assistance and Technology Transfer

The Department of Energy, Mines and Resources (EMR) released its program of research agreements for 1985-86, delineating eligibility, criteria of assessment, general conditions and financial conditions for research grants. The Information Guide on Research Agreements in the Natural, Physical and Social Sciences and Engineering, released in September 1984, includes information on the responsibilities of EMR and its principal units. Directions for research include computer applications in the geosciences, mineral markets, new methods in mining and metallurgical applications, and coal mining and use.

Under this program, research grants totalling $1.389 million were awarded for 1984/85, in support of 158 projects in the natural, physical and social sciences in 40 research centres, including 34 universities, across Canada. The distribution by discipline was the same as in the previous year: 47 percent for earth sciences, 34 percent for energy, and 19 percent for minerals research.

EMR, principally through CANMET, also funded contract research in the minerals area during the year, including projects in mining technology, minerals processing, and materials technology. CANMET's contract research program in energy totalled $15 million; it also included projects of interest to the mineral industry. Coal-related projects included a contract worth $284,840 to the British Columbia Research Council, to continue research into an evaluation of the Hat Creek coal liquefication process. The Ontario Research Foundation received $187,279 to test flash hydropyrolysis of Canadian coals, and $45,409 for conducting scanning and transmission electron microscope studies in coal structure. The Research and Productivity Council and the New Brunswick Electric Power Commission received $33 million to develop a method of electricity generation based on circulating fluidized bed technology.

The federal Cabinet Committee on Economic Regional Development approved a new program called Frontier Energy Geoscience. The program, primarily dedicated to gathering information to provide a geoscience infrastructure for development in offshore areas of the continental shelf, will begin with a 3-year effort funded at a level of $20 million a year. The four main areas to be investigated, both theoretically and geographically are: the offshore east coast, the Arctic belt, the Mackenzie Delta and Valley, and a small area of the west coast. This undertaking is a significant

new initiative, in that the GSC is moving to Canada's offshore in a major way.

Canada is participating in another offshore program, a 9-year international research project led by the United States, to conduct geological explorations of the deep oceans and continental margins and sample the earth's crust below the ocean floor. The Ocean Drilling Program (ODP) will contribute information important to oil and gas exploration, help define offshore boundaries, and examine mineral deposit formations on the sea floor. Canada has committed $15 million over four years, beginning in 1985.

In line with its program to improve remote sensing technologies for resource management and environmental monitoring, EMR announced plans to establish a new satellite receiving station for the Canada Centre for Remote Sensing (CCRS) in the Gatineau Hills (near Ottawa) in 1985. The station is designed to receive data from France's first remote sensing satellite, SPOT. It will provide stereo coverage and increased level of detail, much like aerial photography, for use in topographical surveying and mineral exploration. The data from SPOT will supplement information already being received from the U.S. LANDSAT satellite program.

Infrastructure Assistance

The Prince Rupert Port Corporation (a federal Crown corporation) was created in July to manage the port of Prince Rupert. It is a spin-off from Canada Ports Corporation. Ridley Terminal, the coal terminal at Prince Rupert, was built to serve the the northeast coal development in British Columbia. The terminal, operated by Ridley Terminals Inc. (created in 1981 to design, construct and manage the Ridley Island coal terminal), is 90-percent owned by Canada Ports Corporation and 10 percent by a subsidiary of Fednav Limited (a private company).

Human Resources Assistance

In March the federal government offered $3.6 million towards a job creation project at Sherritt-Gordon's Ruttan mine in Manitoba, designed to give 303 mine workers six months' employment in case of a mine shut down. However, the mine did not close and the assistance was not implemented.

In the summer, Employment and Immigration Canada announced the acceptance of applications for their Career Access Programs for temporary employees in the Canadian mineral exploration industry. The Career Access Program, which pays up to 50 percent of an employee's wages for 26 weeks, previously applied only to permanent employment. This change recognizes the inherently seasonal, uncertain and temporary nature of employment in mineral exploration field parties.

The Modified Industry and Labour Adjustment Program (MILAP) was announced in 1984 by the Department of Employment and Immigration. MILAP is intended to alleviate community distress caused by permanent large-scale industry dislocation in a given sector, when such shut-downs result in large lay-offs which have a significant impact on total community employment. Some of the program elements are: increased training allowance incentives, portable wage subsidies, direct job creation, increased manpower mobility allowance incentives and early retirement benefits. The mining-industry-dependent communities of Labrador City, Wabush, Gagnon, Fermont, Schefferville, Sept-Iles, Port Cartier, Asbestos, Thetford Mines and Murdochville were designated under the program.

MILAP replaced the earlier Industry and Labour Adjustment Program (ILAP). Unlike ILAP, the new program concentrates on labour adjustment situations and does not include any industrial restructuring programs. As well, with the exception of the early retirement benefits which are available to eligible workers in designated industries, benefits under the current program are available to eligible workers in all occupations in the designated communities.

Regulation of the Mineral Industry

The federal government continued its program of publishing regulatory agendas for a number of departments whose activities affect the mineral industry. The agendas are available to the public on request and provide advance information on proposed changes and regulatory reviews.

Mining Regulations

The Canada Oil and Gas Lands Administration and the Mineral Policy Sector of EMR prepared draft regulations for discussion, concerning prospecting, exploration and development of non-fuel granular minerals in the offshore areas

under EMR jurisdiction, i.e. south of 60 degrees (including the Hudson Bay and Hudson Strait Region). DIAND is responsible for the management of mineral resources on land and the seabed north of 60 degrees.

Human Resources Regulation

On May 15, Bill C-34, with major amendments to the Canada Labour code, was tabled. The proposed revisions included an improved child-care leave program, more protection against sexual harassment in the work place, stronger safety and health provisions, and new provisions for the conduct of labour relations. On June 27, the amended Canada Labour Code was read for the third time and passed. The code applies exclusively to workers under federal jurisdiction; for the mining industry, this means all uranium mines, one base metal mine (which happens to straddle the Manitoba-Saskatchewan border), and CBDC's operations in Nova Scotia. It also serves as a pattern for provincial legislation. Several of the new provisions will significantly increase operating costs.

Environmental Regulation

The question of reduction of permissible levels of lead in gasoline continued to be considered by the Department of the Environment over the year. The question has arisen because of concerns that lead emissions from automobile exhaust may be a health hazard. Additional pressure in this issue may arise from the decision of the European Parliament calling for lead-free gasoline throughout the European Community by 1986, three years ahead of the schedule established by E.C. environment ministers.

The federal and provincial governments have agreed to look into developing a standard code of good practice for the transportation of coal by unit trains, to control coal dust emitted by the trains.

As part of EMR's strategic study of the nonferrous smelting industry, which is tied in with the federal government's continuing examination of the issues surrounding acid rain, EMR published a report entitled Canada's Nonferrous Metals Industry: Nickel and Copper in May. The study concluded that, for Canadian copper and nickel producers, the twin objectives of increased international competitiveness and pollution control are not compatible, at least in the

short term. However, it was felt that the 10-year timeframe recently established by federal and provincial environment ministers may provide adequate time for development of effective technologies to permit resolution of both environmental and economic problems facing the producers. A report on lead and zinc was published early in 1985.

In November, a federal/provincial task force was formed to examine the benefits of using low-sulphur western coal as a means of reducing acid rain emissions in eastern Canada. The task force, scheduled to report in the spring of 1985, was to take into consideration the work of a joint Alberta/Ontario coal task force established in April 1984, which examined the question of increasing Alberta coal sales to Ontario.

The Department of Fisheries has been developing a new management policy for fish habitats, and released a discussion paper setting out its proposals in 1984. Some of the proposals were criticized by a number of interests including the mineral sector, and some changes have already been agreed to as a result of the ongoing discussions. A new draft for discussion will be released in mid 1985.

Foreign Investment

On 7 December 1984, the Conservative government introduced legislation to create a new agency, Investment Canada, to replace the Foreign Investment Review Agency (FIRA). In hopes of encouraging more foreign direct investment to stimulate economic growth, the review process for acquisition by non-Canadians will be significantly altered. Reviews of investments will be streamlined, and almost all new businesses will be exempt from examination by the new agency. Reviews will primarily be limited to ensuring that major acquisitions by non-Canadians are of net benefit to Canada. Exact details of the proposed new agency, its structure, mandate and operations, were still under consideration at year-end. In the meantime, FIRA continued to operate throughout the year.

In March, negotiations for financing of an underground gold development project at Terra Mines' Bullmoose Lake property fell through when an American joint venture partner had difficulties with FIRA. However, the project is expected to continue and has received $3 million financing from CMP 1984 Mineral Partnership and Co., a Toronto-based company.

In April, following a six-month review, FIRA ruled against a proposed $10-million investment by the Sumisho Coal Canada Ltd. in the Monkman project located near the Quintette and Bullmoose mines. The investment was strongly supported by the B.C. government and by Petro-Canada. Petro-Canada had 50 percent control of the project, but this percentage would have been reduced by the Sumisho investment. In August, FIRA allowed a revised proposal from Sumisho after changes were introduced conforming to federal guidelines concerning Canadian equity participation in major resource projects. The partners agreed to limit foreign equity participation in the project to 50 percent, and not to carry on any other coal business in Canada without the consent of the federal government, according to the FIRA announcement.

FIRA also approved the following nine takeovers of Canadian mineral industry firms:

- Anderson Mavor (Glasgow, Scotland) to acquire control of National Mine Service (Canada) Ltd. (Sudbury, Ont.) which sells mine supplies, mine health and safety equipment, mining machinery, related components and replacement parts.

- Sulmar Canada Ltd. (Calgary, Alberta) which is wholly owned by Delta Marketing and Shipping Corporation (South Norwald, Connecticut) to acquire control of Procor Limited consisting of its sulphur remelter and forming facilities located at Fort McMurray and Lunton, Alberta.

- F. William Niggemyer (Fremond, Ohio) to acquire control of Universal Equipment Company of Canada which purchases, dismantles, refurbishes and resells used mining and mineral processing machinery and equipment.

- Peter Kontny (Gunzenhausen, Federal Republic of Germany) to acquire control of Chalice Mining Inc. (Vancouver B.C.) which explores for metallic minerals.

- The American Placer Company Inc. (New York, New York) to acquire control of Capital Dynamics Limited (Vancouver, B.C.) which owns two placer mining properties.

- Esso Resources Canada Limited (Calgary, Alberta) which is a wholly-owned subsidiary of Imperial Oil Limited (Toronto, Ont.) which is, in turn, controlled by Exxon Corporation (New York, New York) to acquire control of Wilanour Resources Limited, Wilmar Mines Limited and Annco Mines Limited, known as the Wilanour Partnership (Toronto, Ont.) which consists of a mineral property in the area of Red Lake, Ontario.

- Finacreta AC (Glarus, Switzerland) to acquire control of Canalux Inc. (Montreal, Quebec) which exports asbestos fibres.

- SGS Supervision Services Inc. (Vancouver, B.C.) which is a wholly-owned subsidiary of Societe Generale de Surveillance Holdings SA (Geneva, Switzerland) to acquire control of GEO Vann Oilfield Services of Canada, Ltd. consisting of its CT and E Division (North Vancouver, B.C.) which analyzes and tests coal samples.

During 1984, the following foreign-owned interests were given permission by the FIRA to open new businesses in mineral-related activities in Canada:

- Pechiney (Paris, France) to license Pechiney's process for the production of aluminum by the electrolytic reduction of alumina and to provide related technical assistance.

- Pechiney (Paris, France), Société générale de financement du Québec (Montreal, Que.), and Alumax Inc. (San Mateo, California) to produce aluminum (Becancour, Quebec).

- MPLC Processes Ltd. (Calgary, Alberta) which is wholly owned by MPLC Holdings S.A. (Monte Carlo) to construct and operate a demonstration reactor for the production of magnesium chloride and eventually to produce primary magnesium (Calgary, Alberta).

- Minworth Limited (Bakewell, England) to mine and process fluorspar (St. Lawrence, Nfld.).

- Universal Equipment Company (Cleveland, Ohio) to purchase, dismantle, refurbish and resell used mining and mineral processing machinery and equipment (Red Deer, Alberta).

- Central Electricity Generating Board Exploration (Canada) Limited (Calgary, Alberta) which is a wholly-owned subsidiary of Central Electricity Generating Board (London, England) to explore for, develop and produce uranium (Calgary, Alberta).

- Greenwich Resources Inc. (Vancouver, B.C.) whose largest shareholders are Robertson Research Group, (North Wales, United Kingdom) and Vam Limited (Sydney, Australia) to explore for, develop and produce metallic minerals (Vancouver, B.C.).

- Sumisho Coal Canada Limited (Vancouver, B.C.) a wholly-owned subsidiary of the Sumitomo Corporation (Tokyo, Japan) to explore for and produce coal (Vancouver, B.C.).

- Korea Electric Power Corporation (Seoul, South Korea) to explore for, develop and produce uranium (Vancouver, B.C.).

- Kurt D. Lund (Cloquet, Minnesota) to mine and process jade (at Iskut, B.C.).

- Bharat Kuman K. Shah (Madras, India), Peter E. Rebel (Toronto, Ontario) and Kuram Narasimham Krishnan (Madras, India) to import and export a variety of goods including asbestos fibres.

- Zeni Drilling Company (Morgantown, West Virginia) to provide shaft drilling services to the mining industry and to supply drilling fluids.

Marketing and International Trade

Task Force on Market Development

Canada sells almost 80 percent of its mineral products to 100 countries, in increasingly competitive markets. In 1984, attention was increasingly focused on questions of international trade and trade policies. There was growing recognition that unrelated actions by multilateral institutions and governments could affect the world market system. Specific actions appropriate to periods of growth could contribute to market instability in periods of recession. Canadian industry has been improving its competitiveness through improved productivity, but still has to respond to

many issues related to market access and fair competition. To address such questions, in the face of the combined threat of growing competition from other mineral producing countries and reduced demand for most minerals, the Mining Association of Canada and the federal Department of Energy, Mines and Resources formed a task force on market development and the removal of nontariff barriers.

U.S. Trade Concerns

The United States is Canada's major mineral market, so resolution of such U.S.-related issues as trade policies, nontariff barriers and Canadian exemption from protectionist policies are of particular importance. Early in the year, negotiations on the subject of free trade for nonferrous minerals between the United States and Canada were initiated by government officials. In the fall, the newly-elected Conservative government reaffirmed the Canadian government's commitment to more open trade, to avoid what it sees as dangerous U.S. domestic protectionist practices. Canadian foreign trade policy is undergoing extensive review.

Throughout 1984 there was a continuing concern about U.S. measures threatening traditional U.S. markets for Canadian minerals. For example, proposed United States restrictions on imported steel and copper were the subject of intense lobbying by Canadian industry representatives, until the proposals were rejected late in the year. The U.S. Department of Energy began to monitor uranium imports, to determine whether they injure domestic companies or threaten national security. In addition, the United States Environmental Protection Agency proposed a ban that threatens $70 million in Canadian exports of asbestos products, primarily affecting Quebec's mining sector.

Anti-Dumping Legislation

In December a new Special Import Measure Act was introduced by the Canadian government, to crack down on dumping and unfairly subsidized goods from abroad. The law, which replaces the Anti-dumping Act, is designed to streamline and speed up processes and investigations of complaints of unfair import competition.

Trade Delegations

A number of trade delegations and visits were organized by the federal government over the year, including the following. A 7-member industry/government potash mission travelled to France, the Federal Republic of Germany, the German Democratic Republic and the Kingdom of Jordan in October and November, and visited production and research facilities. In the fall, the Department of Energy, Mines and Resources conducted a study group for a Chinese delegation interested in all aspects of exploration, development and marketing of asbestos; the Chinese also expressed interest in zinc smelting and in other future technical assistance from Canada. The External Affairs Minister, Joe Clark, and the Japanese Foreign Minister met in December and discussed Canadian coal exports to Japan. The CANDU nuclear reactor was also on the agenda. A Japanese feasibility study on use of the reactor is slated for completion in 1985. Other mineral missions over the year included one to Sweden (iron ore), one to Brazil (nonferrous metals and iron ore), and one to the Middle East (asbestos).

Commodity Organizations and Research

The Minister of Energy, Mines and Resources announced in April the establishment of the Asbestos Institute in Montreal. The Institute is being funded by equal contributions from the governments of Canada and Quebec, and the asbestos industry. Its primary concerns include product and health research, market development, and the dissemination of information on the safe uses of asbestos.

Canada and Australia hosted a meeting of 31 countries in Geneva, to continue discussions on the need for an intergovernmental statistical organization on nickel. These countries represented over 95 percent of world production and 90 percent of consumption. As well, there were observers from the Commission of the European Communities, GATT, UNCTAD and the International Lead and Zinc Study Group. There was general agreement on the need for better data on nickel, with improved quality, timeliness and international comparability. Most delegations indicated a willingness and ability to improve the quality of nickel data they provide for publication. It was also agreed that another meeting will be held, possibly in the spring of 1985.

"Gold" Dollar

In response to the possibility that Cabinet would authorize the introduction of a dollar coin replacing the bill, the Royal Canadian Mint asked Sherritt Gordon Mines Limited and Inco Limited to submit suggested coin samples and price estimates. Both companies came up with a coin composed mostly of nickel; Inco suggested gold plating, while Sherritt proposed coating the coin with a less-expensive gold-coloured tin-bronze alloy. The matter was still under consideration at year end.

Uranium Export Policy

In October, the Uranium Export Review Panel (UERP) approved a $10-million sale of uranium oxide by Key Lake Mining Corporation of Saskatchewan to Virginia Electric. The sale, involving 500,000 pounds of uranium over a period of years, was referred to the UERP because federal government policy requires that any value-added work to minerals should be done in Canada unless it can be demonstrated that the sale would otherwise be lost.

In a letter dated 15 September 1983 from Jean Chrétien, then Minister of Energy, Mines and Resources, the federal policy (first enunciated in 1974) of requiring uranium to be exported from Canada in the most advanced form possible was reaffirmed. Mr. Chrétien stated that export of uranium concentrate will require special review by Ministers, and exemption would be given only in 'highly exceptional circumstances'. This policy creates a problem for Canadian producers selling in U.S. markets, where many customers are already committed to long-term processing contracts and require concentrate rather than processed uranium.

Taxation Matters Affecting the Industry

Corporate and Personal Income Tax

The statutory federal corporation income tax rate remained unchanged in 1984, at 46 percent, before the 10-percent abatement to accommodate provincial and territorial taxation. In addition, mining companies are eligible for a resource allowance of 25 percent of certain resource profits, which, with the 10-percent abatement, serves to reduce the marginal effective income tax rate to 27 percent. Provincial

corporation tax rates vary, giving 1984 combined federal/provincial corporation tax rates (marginal effective rates) for mining profits as shown in the table below. The combined rates take into account the 10-percent provincial abatement and the 25-percent resource allowance. Provincial mining taxes and other provincial and municipal levies are not included.

1984 CORPORATE INCOME TAX RATES FOR MINING INCOME
(percent)

Province/ Territory	Statutory Provincial Rate	Marginal Effective Combined Rate[a]
Newfoundland	16	39.0
Nova Scotia	15	38.3
New Brunswick	15	38.3
Quebec	5.5	31.1
Ontario	14	36.3
Manitoba	16	39.0
Saskatchewan	16	39.0
Alberta	11	35.3
British Columbia	16	43.0
Northwest Territories	10	34.5
Yukon	10	34.5

Source: EMR Mineral Policy Sector.

[a] Calculated as provincial statutory rate, plus federal rate minus 10 percent (46 - 10 = 36 percent), reduced by the 25-percent resource allowance (i.e. times 0.75). For example, Newfoundland: (16 + 36) x 0.75 = 39.0.

The federal budget of February 1984 introduced few income tax change proposals of significance to the mineral industry. A draft Income Tax Act was published in August, but did not become law at that time because of the change of government.

In October 1984, possibly because of similar problems with the Scientific Research Tax Credit, the Rulings Division of Revenue Canada retroactively suspended advanced tax credit rulings for joint venture and limited partnership financings which flow tax credits through to outside investors. However, in November, following complaints from a number of joint venture participants, the ruling was changed to apply only to applications made after the October 25th announcement.

On November 8 the new Conservative Minister of Finance delivered his economic and fiscal statement, announcing his intention to proceed with the previous government's draft Income Tax Bill, with some minor changes. The issues of tax deductions and tax credits were deferred to the spring 1985 budget. In the statement, it was also announced that mine operators would be able to apply for a tax rebate of 3 cents per litre on motor fuels used in off-highway production activities, and would be given a rebate of 1.8 cents per litre on the Petroleum Compensation Charge, equivalent to the announced increase in the charge. The federal government confirmed its commitment to gain sharing and its intention to look into fiscal incentives to encourage such programs. Also announced were tax relief for termination benefits in remote communities, and extension until the end of 1985 of the remission order on nonsalary benefits to northern employees.

Sales and Excise Tax

The February 1984 budget proposed an increase of one percentage point in the federal sales tax, to take effect 1 October 1984. This measure was put into effect by the Conservative government. Proposed changes in the administrative and appeals procedures for sales and excise taxes were, however, put on hold by the new government, pending further consultation.

Mining Taxation

Direct taxation of the mining industry by the federal government is limited to the Northwest Territories and Yukon, and will be dealt with in the following section.

4. YUKON AND NORTHWEST TERRITORIES

Introduction

The Northwest Territories showed a substantial increase in the value of mineral output in 1984, as several mining operations reopened following a period of closure. Value of production for the year was $738 million, as compared with $595 million in 1983, according to EMR figures. There were 10 operating mines in the NWT: 5 gold mines, 3 lead/zinc mines, one silver mine and one tungsten mine.

Primary emphasis in exploration and development, as well as in major spending plans for 1984, shifted towards gold. Much of the activity in gold has been centred on the Contwoyto Lake area, where Echo Bay's Lupin mine has been operating successfully.

Urangesellschaft Canada Ltd. announced the discovery of two new zones of uranium mineralization in the Baker Lake area, near its Lone Gull deposit. The company has estimated that a five-year lead time would be needed to bring a mine on stream.

In the Yukon on the other hand, conditions remained grim in the mineral sector. There has been little improvement since 1982, when all lode mines were closed. The only lode mines operating in 1984 were United Keno Hill, which reopened in 1983, the Sadie Ladue, and three other small seasonal silver/lead mines. Stripping and predevelopment work at the Cyprus Anvil mine was suspended indefinitely in October 1984, when the company locked out its unionized employees as the result of a labour dispute. Production is unlikely to resume before late 1985 at the earliest. The mine was the territory's major employer until production was suspended in June 1982.

Gold presented a more promising picture in the Yukon, as placer mining accounted for most of the gold output over the year. Expenditures on mineral exploration rose to about $25 million in the year, about double the amount spent in 1983.

Development work by Erickson Gold Mines continued on AGIP Canada Limited's Mount Skukum gold property, which will be a lode gold mine, and on Amax's Mactung tungsten mine, although tungsten markets are still not strong. Dawson Eldorado Gold Exploration plans to spend $6.5 million by the end of 1987 on its Plata-Inca silver property. There was also considerable activity in the Watson Lake area, spurred by interest in the Midway deposit on the B.C.-Yukon border.

Federal Government

Introduction

The federal government has responsibility for all subsurface resources in the northern territories, and its authority to administer these resources is exercised largely by the Department of Indian Affairs and Northern Development (DIAND).

As part of its continuing effort to devise a mineral policy that will encourage northern exploration and development, in 1984 DIAND completed a series of eight discussion papers, three of which were released before year end, as background information for a consultative process that involves government, industry, concerned groups, and citizens in the Yukon and Northwest Territories. The publications released were:

- Mines and Important Mineral Deposits
- Northern Mining Communities
- Mineral Industry Incentives Programs and Services

No further papers in this series will be issued. At year end, work was in progress on a discussion paper, which was released early in 1985 (The Northern Mineral Sector: A Framework for Discussion).

Assistance to the Mineral Industry

A cost-sharing 5-year economic development agreement was still under discussion by the Government of Yukon and DIAND at the end of 1984. The proposed $13.2-million agreement, to which the federal government would contribute $11.9 million and the Yukon government $1.3 million, emphasizes diversifying the territorial economy, and identifies the stimulation and strengthening of the mineral sector as a priority. Subsidiary agreements are expected to include mineral resources, economic development planning, renewable resource development, tourism, and small business. The Council for Yukon Indians was also involved in the negotiations.

Early in the year, the Canadian Transport Commission (CTC) released a study recommending that the existing road and rail system serving the Cyprus Anvil mine be maintained for the present. However, in December a recommendation was released by DIAND, in an interim report on Cyprus Anvil's financial problems, that trucks only, rather than trucks and rail, should be used to ship ore from the

mine at Faro to tidewater at Skagway, Alaska. This would require approval of the Alaskan government, which opposes the trucks-only option,[1] and year-round maintenance of the South Klondike Highway, which is opposed by the CTC. The trucks-only route is expected to offer significant savings to the company, as much as $7 to $10 million per year, although loss of the traffic from the mine would mean the demise of the White Pass and Yukon Railway. A final decision on Cyprus Anvil is expected in 1985.

A proposed new mandate for the Northern Canada Power Commission (NCPC) was under review over the year. Several fundamental changes have been proposed: the NCPC headquarters would be moved from Edmonton to Yellowknife; regulation of the NCPC would be controlled by a panel consisting of territorial representatives and members from the NEB; a new rate structure would be introduced to reflect the cost of delivering power to all users; there would be a reassessment of NCPC's debt structure; and direct federal energy subsidies would continue until March 1985. The NEB, supplemented by one representative from the Yukon and one from the NWT, has held public hearings into the proposed new rate structure, and will submit its recommendations to the Minister of DIAND in 1985.

The budget of the Northern Affairs Program was subjected to some preliminary cuts late in the year. As a result, the program of Assistance to Prospectors, which has provided grants totalling $70,000 annually, was dropped for 1985/86. The Land Use Mapping Series project was halted, with a $400,000-cut in its budget, and grants totalling $18,000 to the Alberta Chamber of Mines and the B.C. and Yukon Chamber of Mines were stopped.

A new federal/territorial funding agreement for the Northwest Territories involving $309 million in transfer payments was announced. Formula-based financing, due to be implemented in April 1985, will permit the territorial government to replace its annual financial negotiations and planning with a three-year term. The territorial government was given more flexibility and independence in allocation of funds, revenue-raising and policy initiation. However, there will be no additional funding if program

1. In April 1985, the Governor of Alaska agreed to the trucks-only option. He has put forward a proposal and appointed a negotiator to discuss a cost-sharing agreement for year-round maintenance of the South Klondike Highway with the Government of Yukon.

costs exceeded revenue. Federal financial assistance will continue to be extended to resource development megaprojects, federal programs, land claims, and the transfer of federal programs to the territorial government.

Regulation of the Mineral Industry

Placer Mining

In the spring of 1984, the Department of Indian Affairs and Northern Development endorsed the report of the Yukon Placer Mining Guidelines Public Review Committee. The committee had been established to review placer mining guidelines, which had been drawn up by DIAND as well as the departments of the Environment and of Fisheries, but which were rejected by the mining industry and the Yukon government. A number of presentations, including socio-economic and environmental impact studies, were presented to the committee, but no consensus emerged from the exercise. In spite of significant differences of opinion, the committee released its report, including recommendations, in 1983.

A major change in the regulation of placer mining occurred on 7 February 1984, with the passing of an amendment to Section 11 of the Northern Inland Waters Regulations. This amendment removed the provision for "authorizing the use of water without a licence", and was made in response to a federal court ruling that the provision was ultra vires. Thus the responsibility for permitting the use of water was transferred from the controller (an employee of DIAND) to the Water Board (a quasi-judicial board appointed by the Minister). This change seems to have led to an easing of tensions in this area of regulation.

A joint Committee on Placer Mining Research was also established in 1984, to coordinate research and development into placer mining technology and related issues. The committee is co-chaired by DIAND's regional director of Northern Affairs in Whitehorse and by the president of the Klondike Placer Mining Association. Committee members are drawn from the Water Board, the Yukon government, several federal departments with environmental interests, and from the placer and hardrock mining industries.

Fisheries

On 20 January 1984, in a landmark decision, the B.C. Court of Appeal (R. v. Macmillan Bloedel, 1984, 2 W.W.R.

699) ruled that application of Section 31 of the Fisheries Act should be restricted to fisheries where the fish occupying the habitat have a commercial or sport fishing value. Thus DFO is now obliged to show that a particular stream is occupied by fish of a size and type that have a commercial or sport fishing value. This decision is subject to appeal, and if upheld is expected to result in a major change in the regulation of all industrial activities, especially placer mining.

Disposition of Mineral Rights

The federal House of Commons passed amendments to Section 12 of the Yukon Quartz Mining Act that would simplify and remove legal limitations respecting the staking of claims and would also validate most existing claims in Yukon. In the past, major exploration companies have circumvented the eight-claim limit by employing individuals to stake eight claims and then transfer them to the company. As a result of litigation before the courts, it appeared that this practice would be declared illegal, thus making most claims staked in Yukon invalid. The amendment to the act not only removed the eight-claim limit, but also legitimized all existing claims, thus averting what could have been a serious problem.

Regulation Review

A comprehensive review of northern mineral regulation was initiated by DIAND officials, in conjunction with the northern mineral policy review. Among the resulting proposals were the following.

- Modifications were proposed to the Canada Mining Regulations, affecting claim staking procedures in the Northwest Territories, and decentralizing the administrative system.

- Proposals for change to the Northern Inland Waters Act include modifications to licencing and other legal items, in order to increase efficiency in application approvals and to reduce legal uncertainties.

- The federal Territorial Coal Regulation (1954) was reviewed, with the purpose of updating it to meet current needs, including offshore considerations.

- The federal Territorial Quarrying Regulation (1951) was reviewed.

- A draft discussion paper was released concerning the Northern Canada Surface Rights Act.

Environmental Regulation

In relation to environmental regulation, additional activities included the awarding of environmental study contracts to investigate regulatory issues, and for the Arctic Land Use Research Program. The report of the Task Force on Conservation Policy was nearing completion by the end of the year.

In October, the Pearse Commission (set up to inquire about the federal government's role in Canada's water resources) met in Yellowknife to hear briefs presented by various groups including the government of the NWT, representatives of the Dene nation, DIAND, and the NWT Chamber of Mines.

Taxation Matters Affecting the Mineral Industry

In the Yukon, under the terms of the federal Yukon Quartz Mining Act, royalties are paid by mines with annual output exceeding $10,000 in value. The rates range from 3 percent of annual profits for profits from $10,000 to $1 million to 6 percent for profits between $5 million and $10 million. For profits in excess of $10 million, the tax rate increases by one percent for each additional $5 million. There is no upper limit.

The Yukon Placer Mining Act, also a federal act, imposes a royalty of 2.5 percent of the value of all gold dust and bar shipped from the Yukon. For this purpose, gold is still valued at $15 per ounce.

In the Northwest Territories, under the federal Canada Mining Regulations, there is a three-year tax holiday on royalties for new mines. After 36 months of production, for mines with output exceeding $10,000 annually, royalties ranging from 3 percent to 6 percent of annual profits are imposed, with an additional 1 percent for each $5 million of profits exceeding $10 million, but not exceeding a maximum rate of 12 percent. Write-offs are offered for preproduction, exploration, and development expenses within the NWT. An annual processing allowance of up to 8 percent of the original cost of the processing assets is permitted, not to exceed 65 percent of the value of output of the mines.

There were no changes in federal royalty rates in 1984.

Government of the Northwest Territories

Proposed Mineral Policy

The GNWT at present has no policy for dealing with specific mineral resource issues, and the Minister of Economic Development and Tourism, Tagak Curley, has announced that formulation of a mineral policy for the Northwest Territories is under discussion. Such a policy would allow specific issues arising in connection with mineral resource development to be addressed in the context of a consistent long-term plan. Consultation on the proposed policy will be held with the mining industry and the Northwest Territories Chamber of Mines.

Renewable Resource Compensation Policy

This policy, which was approved in 1984, is designed to protect renewable resource harvesters from adverse effects of development projects and activities. Costs associated with the potential loss of renewable resources will be taken into account in the overall planning, design, and approval of resource development projects. The resource developer will be responsible for payment of such costs arising directly from development activity. Compensation agreements must be negotiated with affected individuals or communities and reviewed by the Department of Renewable Resources before GNWT project approval will be granted. The policy applies to renewable resources on land, sea, ice, and water, and stresses prevention and mitigation of such costs.

Health and Safety

A new Mining Safety Ordinance was implemented in 1984, following two years of review and revision in consultation with mining representatives from both management and labour, and with government agencies. The new ordinance includes certification processes for shift bosses, blasters, and hoist operators.

Yukon Government

Infrastructure Assistance

The Yukon government approved installation of a power line from Whitehorse to Teslin, and is considering a request for a line from Whitehorse to Mount Skukum, where the Mount Skukum gold mine is expected to go into production. Both power lines will be of assistance to mining developments in the Yukon.

The Yukon government also approached the Governor of Alaska, in a successful attempt to persuade him to reconsider his opposition to the opening the road to Skagway for truck transport of Cyprus Anvil ore, in the event that the mine reopens.

5. BRITISH COLUMBIA

Introduction

1982 and 1983 were difficult years for the mineral industry in British Columbia; nineteen mines reported losses totalling $395 million over the two years. In 1984 the situation remained serious, although the value of production of metals plus coal increased to an estimated $2.145 billion, up from just over $1.7 billion in 1983 as a result of the operations of new coal mines in the north east, and expansions in the south east. Of the 33 major British Columbia mines, eleven were closed in 1984 and most others were struggling. About 3,500 jobs in mining have been lost in recent years, many permanently.

On June 5, British Columbia's $2.5 billion northeast coal development megaproject was officially opened. The project consists of a 6-million tpy mine owned by Quintette Coal Limited and operated by Denison Mines, and the 1.7-million tpy Bullmoose mine, operated by Teck Corporation. The Japanese steel industry, 55 international banks, and other Canadian mining companies are also participating. B.C. has constructed Canada's only electrified railroad, to connect with the CNR line, which in turn has been substantially upgraded across northern B.C. to Prince Rupert. Due to world overcapacity in coking coal, the success of the project relies heavily on the willingness of the Japanese steel mill owners to meet their price and volume commitments. Unfortunately, current estimates of coal demand in the Pacific Rim area are significantly lower than previously predicted. Both Bullmoose and Quintette have already taken 10-percent price reductions, but the potential revenue losses for Bullmoose have been partially offset by increased volumes.

The thermal coal industry also had its difficulties. It continued to contend with problems such as competition from lower-cost producers in Australia and South Africa, high transportation costs, and the high value of the Canadian dollar. In response, established mines intensified attempts to diversify and develop a wider marketing base.

The performance of the copper industry, so dependent on world prices and demand for copper as well as for by-products such as molybdenum and gold, continued to be dismal. In June, after an eight-month shutdown, Brenda Mines reopened in hopes of an increase in copper prices, only to close again in December. Noranda closed its Goldstream copper/zinc mine near Revelstoke. Teck Corporation

announced the shutdown of the Highmont copper/molybdenum mine. Cominco deferred expansion plans for the Highland Valley copper mine. In addition, Esso Minerals' Granduc copper mine near Stewart closed permanently in April.

Zinc was an exception to the otherwise mainly gloomy picture. Prices and demand for zinc rose in 1984, in part as a result of an increased use of zinc by the automobile industry. Cominco, B.C.'s major lead/zinc metal producer, showed a profit of $24 million by October, as opposed to a net loss of $40.4 million the previous year. Westmin's H-W deposit, adjacent to existing underground operations (Lynx and Myra), was in an advanced state of underground development for startup in 1985.

In aluminum, Alcan shelved its $3-billion Kemano expansion project, including two new smelters, citing poor market conditions. The project has encountered substantial opposition from environmental groups. Having already invested $50 million in the project and $15 million in environmental studies, Alcan may go ahead at some future date.

There was some improvement in labour/industry relations in B.C. in 1984. Perhaps because of the fragile economic condition of many companies in the mining industry, there was little strife and some improvement in productivity.

Assistance to the Mineral Industry

Continuing with its program of restraint, the B.C. government increased several of the fees charged to the industry by agencies such as the Mineral Resources Division, reduced some programs, and cut back on the activities of the Geological Branch. Expenditures for the division were $8.4 million in 1982/83, and about $6.8 million in 1983/84 and 1984/85. Fees for services for mineral resources were $6.1 million in 1983/84.

Direct Assistance

On 23 November 1984, a new 10-year federal/provincial Economic and Regional Development Agreement was signed, replacing the General Development Agreement which had expired in March. The new agreement provides for direct communication between federal and provincial line departments, such as B.C.'s Ministry of Energy, Mines and Petroleum Resources and EMR. Previously, all economic

negotiations were channelled through the Department of Regional Economic Expansion. By the end of the year, discussions on a subagreement for the mineral sector were being planned.

Research Assistance

The Ministry of Energy, Mines and Petroleum Resources released a coal liquefaction study report in January, confirming the potential for producing gasoline and other liquid fuel from coal deposits at Hat Creek using the Fischer Tropsch technique of hydrocarbon synthesis adopted by SASOL in South Africa. It was estimated that a production facility would cost $5.8 billion (in 1980 dollars) and create substantial employment: 4,500 construction jobs, 2,300 permanent jobs, and 2,500 indirect jobs. Though the Ministry of Energy and Mines considers the project potentially feasible, there are still many technical and economic problems to be overcome, as well as social and environmental concerns. The evaluation project was jointly supported by the federal and provincial governments under the federal Energy Conversion Program.

Exploration Assistance

New regional geochemical survey maps were released by the provincial government in June, indicating promising mineral locations in the Hazelton area north of Smithers and the Manson Creek area west of Williston Lake. The survey, carried out jointly by the B.C. Ministry of Energy, Mines and Petroleum Resources and the Geological Survey of Canada, is expected to stimulate exploration investment and new mining claims in the two areas. Provincial sources estimate that exploration expenditures as high as $3 million may result.

Regulation of the Mineral Industry

Mine Reclamation Bonding

In 1984 the Government of British Columbia enabled provisions of the Bonding Act to apply to reclamation requirements of the Mines Act, allowing mining companies the use of a variety of financial instruments for reclamation, including irrevocable letters of credit, surety bonds, etc.

Formerly only cash or cash-equivalent security was allowed, which created financial hardship during the start-up phase of some mining proects.

Environmental Regulation

Coal Project Approvals

On May 14, after six months of assessment, a report of the Minister of the Environment on the public inquiry of the Quinsam coal project was released. The project, which will provide about 250 jobs, will produce 1 million tonnes of thermal coal a year. The inquiry had been requested in February 1983 by the Environment and Land Use Committee of Cabinet (ELUC) under the Environmental Management Act. This was the first time such an inquiry was required as part of the process of granting Stage II approval in principle. The public inquiry (conducted between October 12 and November 28, 1983) dealt with such issues as acid generation, suspended solids, nutrients, monitoring, and bonding. Representations were given by the federal and provincial governments, the company, and 40 public interest groups Officials from Quinsam Coal Limited reacted positively to the process, noting that the project was granted Stage II approval under public scrutiny and independent evaluation. Further, the environmental investigation led to useful suggestions and positive steps for measures to satisfy environmental concerns; for example, the company has since appointed an environmental supervisor. It is claimed that this inquiry will profoundly influence the way future mine development investigation will be carried out in B.C. and the rest of Canada. However, at year end, federal environmental agencies had not responded to the inquiry recommendations.

The Sage Creek coal mine development proposal received Stage II approval in principle in February. The development would have two open-pit mines, providing 480-530 direct and an estimated 760 spin-off jobs. About 2.2 million tonnes of clean thermal coal could be produced per annum. The proposed project has been referred to the International Joint Commission for a review of mine-related environmental questions. Charged with upholding the Boundary Waters Treaty of 1909, the Commission will investigate the possibility that mine-water tailings and other disturbances may pollute Montana's Flathead River and some lakes, and cause air pollution in Glacier/Waterton Lakes International Peace Park.

Changes to Project Review Process

In May, major changes and streamlining of the project review process for new mines or expansions were released. They include:

i the replacement of the separate review processes for coal and metal mines by a single process;

ii a fast-track (two-stage) review process for mines which are simple in design and pose no important environmental or social problems. The full three-stage review will be applied only to complex projects with major environmental or social impacts;

iii for all mines, a decision on approval-in-principle at the end of Stage I, rather than Stage II. This will give mining companies much earlier indication of project acceptability;

iv custom-tailoring of the terms of reference for company submissions, rather than a standard checklist;

v evaluation of the involvement of government ministries in the process on a 'need-to-know' basis. Projects will be reviewed only by those ministries with legitimate interest, determined on a case-by-case basis. This replaces the approach which involved a standard group of ministries in all mine reviews;

vi review of all mine-related regulations, with the aim of eliminating unnecessary regulations and minimizing duplication and delay;

vii a new procedural manual, to be published in the near future.

One thing that remains unchanged in the review process, the government states, is its open nature. The public's right of access to company submissions and government comments at the appropriate stage has been reaffirmed. Companies are expected to consult with the public on a regular basis as project planning progresses, and the province retains its right to call a public hearing if circumstances warrant.

Also retained, according to the government, is the 'single-window' approach, intended to improve efficiency for government as well as industry. Industry should not have

to produce as many detailed and costly project reports; this in turn should reduce the amount of government staff time required to review such data.

Other Environmental Initiatives

The B.C. government initiated several other mineral related activities aimed at protecting the environment. In the spring, the federal and provincial governments cooperated on the problem of removing low-level radioactive wastes generated by a metallurgical extraction plant in Surrey, B.C. Updated mine reclamation guidelines were released, emphasizing the requirement for a security deposit to ensure that reclamation programs would be carried out as agreed.

Financial Regulation

In an attempt to restore investor confidence following a number of problems involving speculative mining shares, the Vancouver Stock Exchange and the British Columbia Superintendent of Brokers significantly altered policy by shifting the VSE emphasis to listing more developed, rather than junior, companies. Among other changes, companies must now spend a minimum of $60,000 for exploration (or business development) before they will be accepted for listing on the exchange.

Marketing and International Trade

In the spring, Industry Minister Don Phillips undertook a series of trade missions to southeast Asia and Scandinavia, and organized a 16-day visit to Australia for mining industry representatives, in hopes of diversifying B.C.'s export markets. Also during the year, the Minister of Energy, Mines and Petroleum Resources, Stephen Rogers, undertook mining trade missions to India, China, Malaysia, Indonesia and Thailand, to promote international trade in minerals and in mining technology.

Taxation Matters Affecting the Industry

The provincial budget of 20 February 1984 continued the policy of fiscal restraint introduced in 1983. A surtax of 4 percent was announced, payable on all provincial income tax

including the existing surtax on higher incomes. Effective 21 February 1984, an expanded list of safety equipment was exempted from retail sales tax.

In August of 1984, the B.C. government released a white paper called Taxation and Economic Development: Background Information for a Consultative Process to provide information on business taxation in B.C., and to offer a comparison with the taxation regimes in other jurisdictions. In conjunction with the paper, the Ministry of Finance initiated public meetings in over 20 communities throughout the province, between September and November. These consultations were part of the government's overall assessment and review of taxation and economic development in the province. Goals of the review included simplification of the existing system of taxation and the creation of permanent private sector employment.

While acknowledging the difficulties encountered by the resource sectors in terms of fluctuating world prices and competition, the B.C. government pointed out in the White Paper that its avenues for taxation are limited. As a result of jurisdictional restraints, accompanied by diminishing profits in the mineral industry, the government reports that it has had to rely increasingly on fixed taxes (e.g. property and corporate capital tax) and volume-sensitive taxes (e.g. sales tax, workers' compensation fees, and charges for utilities). For example, the mining industry has found that its property taxes have increased by 100 percent since 1980 and its water taxes (incorporated into electrical rates) have jumped from $1.7 million to $17 million. The 1984 increase in the water royalty was 22.6 percent.

Two approaches to reform were outlined in the White Paper. The government could, at one extreme, use the tax system as a tool to stimulate selectively certain sectors of the economy via exemptions or incentives. At the other extreme, it could use taxation to establish a neutral tax environment across sectors. It was suggested that the review would attempt to determine what changes, if any, are necessary to strike an appropriate balance between a 'selective' or 'neutral' tax system.

Following the taxation hearings, the government announced one of the first economic initiatives to stimulate economic activity: deferral of the proposed 6.1-percent increase in water rentals, slated to have taken effect 1 January 1985. This represents an estimated saving of $11 million for users in 1985. The decision primarily affects the resource sector, which is heavily dependent on hydroelectric power. Other economic initiatives as a result of the taxation hearings will be announced in 1985.

Corporation Income Taxes

British Columbia corporation income tax rates for 1984 were 16 percent, with the exception of small businesses, which pay only 8 percent. The rates were unchanged from 1983. British Columbia does not allow the resource depletion declaration. The combined federal/B.C. corporate income tax rate for mining in 1984 was 43 percent.

Mining Taxation

Mining income in British Columbia is taxed under the Mineral Resource Tax Act (17.5 percent on income in excess of $50,000 derived from base metal mining in the province) and the Mining Tax Act (15 percent on mining income in excess of $50,000 on coal, sand and gravel, and some industrial minerals)

Royalties are imposed on coal derived from Crown land. The Coal Act sets a royalty rate of 3.5 percent of the net minehead value of coal sold, and also prescribes fees for licences and rentals.

The Mineral Land Tax Act imposes taxes ranging from $.62 per hectare to a maximum of $4.94 per hectare plus, under the 1984 amendment to the regulations, an additional tax of 12.5 mills on the assessed value of a production tract. The rates are determined by the size and status of the holdings. This act applies to freehold mineral production, most notably coal on freehold lands.

6. ALBERTA

Introduction

Alberta's major non-petroleum mineral products are coal and sulphur. The province, which produces about one-third of the world's sulphur as a byproduct of natural gas and oil sands processing, continued to supply the increased global demand for fertilizer. Sales estimates for 1984 were 8.3 million tonnes of elemental sulphur, and 1984 production was about 5.4 million tonnes.

Alberta produced almost half of all Canadian coal, valued at about $480 million, in 1984. Alberta's coal development expenditures of $126.8 million in 1984 can be primarily attributed to the completion of two major mines: the Gregg River metallurgical coal mine near Jasper (owned by Gregg River Resources Ltd.) and the Obed Marsh thermal coal mine (owned by Union Oil Co. of Canada).

There was some continued interest in placer gold exploration in 1984.

Assistance to the Mineral Industry

Research and Technology Assistance

The Office of Coal Research and Technology was established in 1984 in the Department of Energy and Resources, to encourage, coordinate, and support coal research efforts with private industry. Investigations in coal research and development were pursued in 1984 in coal conversion, principally pyrolysis and liquefaction. In beneficiation and upgrading, efforts focused on oil agglomeration techniques.

The Alberta Research Council experimented with a process of 'flash hydropyrolysis', a rapid heating in the asbence of air, and demonstrated that the process could 'skim' the volatiles off coal, leaving a clean feedstock for thermal plants.

Regulation of the Mineral Industry

In 1984 the Metallic Minerals Regulation, drafted in close collaboration with the Alberta Chamber of Resources, was promulgated. The new regulations replaced the Quartz Mining Regulations. The new act was designed to increase tenure flexibility, encourage development, and reduce gov-

ernment intervention in exploration projects. The regulations were broadened to include more minerals; a longer permit and exploration phase was provided for; and prospecting was encouraged by allowing acceptance of promissary notes and refundable work deposits when applying for a permit.

The Alberta Department of Energy and Natural Resources resumed the public offering of Crown coal rights on 20 July 1984, under Category 4 of 'A Coal Development Policy for Alberta', 1976. Revisions to the Coal Development Policy are being prepared.

Taxation Matters Affecting the Industry

No tax changes were announced in the budget introduced 27 March 1984. An increase in personal income taxes, from 38.5 percent to 43.5 percent of the basic federal tax, went into effect in 1983.

Corporation Income Tax

Alberta's corporation income tax rate in 1984 was 11 percent, unchanged from 1983. Small businesses paid a rate of 5 percent.

Mining Taxation and Royalties

There is no mineral tax on production or sales of minerals produced from Crown leases or freehold lands (except for oil and gas). Royalties are levied under the Mines and Minerals Act and its regulations, on minerals derived from Crown lands, at the following rates:

- coal, modest royalties based on revenue. The royalty provides a 5-year phase-in period before reaching full royalty rates, for new or expanded projects started after 1 September 1981;

- gold, silver, copper, lead, zinc, and other quartz minerals, 12.5 percent ad valorem;

- salt and sodium sulphate, 45 cents per tonne;

- other industrial minerals, various rates based on production or sales, depending on the mineral produced and its intended use.

The Alberta Department of Energy and National Resources has drafted new Crown royalty regulations for metallic minerals, in consultation with the Alberta Chamber of Resources. The proposed rates, when legislated, are expected to provide a provincial tax/royalty environment among the most favourable for Canadian mineral producers.

7. SASKATCHEWAN

Introduction

In an effort to encourage private sector mineral exploration for gold and base metals in northern Saskatchewan, the government introduced a new program in March 1984, the Saskatchewan Mineral Industry Recovery Program. Its mineral development incentives include tax benefits, regulatory changes, and a geoscience support program. Details are included in the sections that follow.

Value of sales of potash, Saskatchewan's major nonfuel mineral, showed an increase of 15 percent in 1984 over 1983 figures. Although high inventories are still a problem, there has been an increase in offshore sales of potash of about 40 percent, largely as a result of an aggressive offshore marketing strategy. There was a reduction in demand for fertilizer in the United States due to poor weather conditions in the spring. Central Canada Potash, a unit of Noranda, closed for three months beginning in July because of excess capacity in the industry.

Midwest Fiberglass Industries Limited of Saskatoon was officially opened in November. The company manufactures corrosion-resistent fiberglass pipe, which is replacing metal fabricated pipe, for the Potash Corporation of Saskatchewan, and is also diversifying to provide other fiberglass products for the resource sector.

Uranium production recovered sharply from the 1983 decline, reaching a value of over $370 million, as new production came on stream. Uranium exploration activity has continued, particularly in northern Saskatchewan.

As in other parts of Canada, interest in gold exploration continued to grow. Exploration efforts were concentrated in the Lac LaRonge region, where several properties reached the feasibility study stage, and to a lesser extent in the Flin Flon area in the vicinity of former producers. Saskatchewan's first gold mine in 40 years, the Bootleg mine, produced briefly but ceased production in December, due to milling problems.

Direct Investment or Equity Participation

The provincially-owned Potash Corporation of Saskatchewan had net earnings of $25.3 million for 1984, following a loss of $18 million in 1983.

Phase two of the Cluff Lake uranium project started up in August. The $120-million Cluff Lake development is 80 percent owned by Amok (a consortium of three French companies) and 20 percent owned by the provincially owned Saskatchewan Mining Development Corporation (SMDC). It has been estimated that there are reserves of 40 million pounds at Cluff Lake.

Over the year, drilling at the Cigar Lake uranium deposit, 50.75 percent owned by SMDC, led to an increase of almost 100 percent in SMDC's uranium reserves. The deposit has proven to be the highest grade known in the western world, and has a gross in-situ value at present prices of about $11 billion.

Key Lake Mining Corporation reached full production in 1984, making it the largest single uranium producer in the world. SMDC owns 50 percent of the Key Lake mine; the other owners are Uranerz (33 1/3 percent) and Eldorado (16 2/3 percent). All of SMDC's share of production in 1984 from its Key and Cluff Lake uranium mines has been successfully marketed, principally through long-term contracts.

In November, the Saskatchewan Power Corporation (SPC) sold its Poplar River Coal mine to Manalta Coal Limited of Calgary for $101,847,784. Prairie Coal Limited (a new subsidiary of Manalta Coal) took over operations of the mine and entered into a three-year coal supply agreement with Saskatchewan Power.

Assistance to the Mineral Industry

Federal/Provincial Programs

An ERDA was signed with Saskatchewan in 1984, and subsequently a mineral development subagreement was signed. The $6.38-million 5-year mineral program will be funded in equal shares by the federal and provincial governments. The agreement, which is aimed at strengthening and diversifying the mineral sector of the provincial economy, consists of geoscientific, processing technology, and market studies. Each government will contribute $3.19 million towards the program.

The major portion of the agreement involves geoscience studies which will be undertaken by both the Saskatchewan Geological Survey (SGS) and the Geological Survey of Canada (GSC). The province's contribution to this program will be $3.14 million. The SGS geoscience studies also form one aspect of Saskatchewan's Mineral Industry Recovery Program. Among proposed activities of the SGS are:

i regional and detailed geological mapping, particularly within areas of high gold and base metal potential;
ii regional geological compilation, interpretation and geochronological investigations;
iii detailed mineral deposit investigations, particularly gold deposits;
iv development of biogeochemical methods for precious metal exploration;
v industrial minerals assessment.

More complete details of the agreement appear in the federal government chapter above.

Regulation of the Mineral Industry

Mineral Resources Act

The Mineral Resources Act contains the legislative authority for control of nonrenewable resource development, management, and conservation. It sets out the powers of the province as owner of the Crown minerals and provides the authority for disposing of mineral rights. However, it is felt that these two aspects of the act are combined in a confusing manner. As a result, the Department of Energy and Mines separated the powers into two acts: The Crown Minerals Act, which deals with Crown ownership and disposal of mineral rights, and the Mineral Resources Act 1985, which sets out the province's general powers of management, conservation and development of nonrenewable resources. The new acts also make a clearer distinction between freehold and Crown minerals. A draft white paper detailing the proposed changes was completed late in 1984 and released for discussion. The acts received final reading in the spring session and were proclaimed effective as of 1 July 1985.

Mineral Disposition Regulation

The Mineral Disposition Regulations 1961 have been redrafted, following consultation with the Saskatchewan Mining Association and other interested parties. Implementation of the new regulations has been delayed, pending discussions on the new Mineral Resources Act and Crown Minerals Act, to facilate coordination of interdependent regulations. Proposed changes will:

i simplify the disposition system by reducing the types of dispositions from four to three;

ii reduce the amount of ground tied up in large permits by reducing the permit term to two years (from five years) and restricting permits in areas of high exploration activity;

iii remove the requirement of taking a claim to lease at the end of ten years, and increase security of tenure by giving a claim holder the right to obtain a lease at his option as well as the right to renew a lease, providing he has adhered to the regulations;

iv increase recording fees and assessment work requirements to closer reflect current money values and to discourage unproductive holding of mineral lands.

Coal Disposition Regulations

As part of the regulatory review process, the existing Crown coal lease disposition policy was reviewed in 1984, with the objective of providing greater security of tenure for Crown coal lease holders. The new Coal Disposition Regulations are expected to be implemented in 1985.

Environment

There were two spills of mildly radioactive waste from the tailings pond at the Key Lake uranium mine in 1984. In January, an estimated 87 million litres of mine water were released when a reservoir overflowed. The Atomic Energy Control Board initially felt the problem was not serious but, following a request from the Saskatchewan Department of the Environment, AECB ordered the Key Lake Mining Corporation to install water level indicators and alarms, submit plans of remedial action, reorganize operating practices, and conduct a comprehensive investigation. In June, a pipe carrying water to the tailings pond became disconnected, resulting in another, but much smaller, spill.

It was announced in the March budget that the Saskatchewan government would continue the practice of putting $1 million into its Environmental Protection Division of the Heritage Fund for each new uranium mill coming on stream.

Potash Expansion

In keeping with the provincial government's policy of encouraging potash expansion in the private sector, approval was given in July to Kalium Chemicals to expand its Belle Plaine Potash Plant by 25 percent. The $100-million project, expected to increase annual capacity to 2 million tonnes, is to be completed by late 1986 and will create 175 construction jobs and 30 permanent jobs.

Taxation Matters Affecting the Industry

Corporation Income Tax

Effective 1 January 1984, the corporation tax rate for Saskatchewan was increased from 14 percent to 16 percent. The small business tax remained unchanged at 10 percent. Also as of 1 January 1984, manufacturing and processing firms qualifying for the small business deduction pay no provincial corporate income tax.

A venture capital tax credit was also introduced, allowing a 30-percent credit for investments in certain venture capital funds. Although the credit excludes mining and exploration ventures, it might apply to contractors to the industry, such as drilling operators.

Mining Taxation

Mineral Disposition Regulations

The Mineral Disposition Regulations 1961 were amended to provide two types of accelerated write-off provisions:

i depreciation of capital assets from mining to a maximum of 100 percent per annum, and from processing to a maximum of 30 percent per annum (previous level 5-15 percent mining and processing combined);

ii deduction of historical exploration expenses from a period 5 years prior to the start of commercial production, to a maximum of 100 percent (previously only current year expenditures were deductable).

These amendments apply to metallic minerals other than uranium. They were not in effect as of the end of the year, and details of the concessions (accounting procedures, etc.) are to be worked out in consultation with in-

dustry. However, there are at present no operating companies in a position to take advantage of the provisions.

Mineral Taxation Act

Under the Mineral Taxation Act 1983, a new Freehold Coal Tax was introduced. The new tax is equal to 7 percent of the selling price of coal, and was implemented on 1 January 1984. (Production from Crown land is subject to a Crown royalty equal to 15 percent of the selling price of coal, under the Mineral Resources Act.)

Potash Resource Payments Agreements

Taxes on potash are levied under the Potash Resource Payments Agreements (PRPA), which were negotiated with individual producers according to a formula based on production, potash prices, and net profits. The agreements expired 30 June 1984, but were extended until the end of 1984. The consultative process which is being undertaken to develop a taxation system to replace the PRPA is taking longer than originally anticipated, so two-year interim agreements will be signed in 1985 that will run until the end of 1986. The new agreements will include some incentives to support market development work and research and development studies. In other respects, they will be much the same as the original agreements with the exception of some administrative modifications.

Mineral Resources Act

Royalties on mineral production from Crown lands in 1984 were fixed by the Mineral Resources Act, which is undergoing revision. Rates included the following:

- potash produced from Crown land is subject to a royalty ranging from 4.25 percent to 9 percent of 49 percent of value of production. The rate varies directly with the grade of mine run ore. (Potash production is valued at the price of potash in mine run ore, subject to a minimum of 49 percent of the net selling price of standard grade muriate of potash per the current published list price). However, this royalty is offset by a 100-percent tax credit against PRPA payments;

- uranium, 3 percent of the gross value of sales plus a graduated royalty based on profitability, up to maximum of 50 percent;

- coal, 15 percent of the minehead value;

- gold, silver, base metals, and a wide variety of other minerals not specified elsewhere, 12.5 percent of annual net profit derived from mining operations.

The Mineral Resources Act also sets out the schedule of fees for leases and permits.

8. MANITOBA

Introduction

Value of mineral production in Manitoba rose slightly in 1984, from $732 million to $755 million. Manitoba copper producers continued to be affected by low world copper prices. Value of copper production in the province fell from $140 million in 1983 to an estimated $109 million. Suffering heavy losses, Sherritt Gordon Mines Ltd. considered shutting down its Ruttan copper-zinc mine; however, the mine was able to stay open throughout the year. In April, Steelworkers at the mine voted to tie their cost-of-living increases to the world price of copper.

Work proceeded on the development of Inco's open pit nickel mine at Thompson in northern Manitoba, with expenditures estimated at $30 million.

While the Manitoba mining industry has been concentrated in nickel, copper and zinc, there has been a growing interest in gold, with exploration in the Flin Flon, Snow Lake, Lynn Lake and Rice Lake areas.

Assistance to the Mineral Industry

Mineral Development

Under the Canada-Manitoba mineral development subagreement, Manitoba will provide $9.9 million in funding, or 40 percent of the total. Provincial programs under the agreement include Precambrian geological mapping, mineral deposit investigations, industrial minerals and rare elements investigations, environmental investigations, glacial prospecting, expansion of drill core storage facilities, computer-assisted design of underground mines, and other research areas. For more detail on the programs, see chapter 3.

In March the Manitoba government and the Aluminum Company of American (ALCOA) signed a letter of understanding to undertake a joint feasibility study for a $700-million aluminum smelter. It was agreed that, should the smelter project proceed, Manitoba and ALCOA would participate in the development and operation of the smelter on an equal basis. In December, ALCOA withdrew from the joint

study due to a re-assessment of corporate priorities, although recognizing that Manitoba would be a leading contender for smelter development.

The Manitoba government gave Sherritt Gordon Mines a $10-million loan to help it develop the deeper levels of the Ruttan mine. The mine is in the process of a major deepening program to improve ore grades in an attempt to continue operations.

A feasibility study on the development potential of a potash deposit held by Canamax Resources Inc. was begun, in conjunction with the Manitoba government. Preliminary estimates put reserves at 440 million tonnes grading better than 25 percent K_2O for the deposit, which is located in southwest Manitoba in the Russell-Binscarth area. Development costs were estimated at $500 million and it was suggested that the project might create as many as 500 jobs if it proceeds. The study is expected to be completed by mid-1985. The question of government participation is to be resolved upon completion of the feasibility study.

Regulation of the Mineral Industry

Land Use

A master development plan for the Grass River Provincial Park was announced in 1984. An earlier proposal to exclude mining from certain specified zones was revised, after mining interests claimed that the restrictions would encompass the best potential copper, zinc, gold and silver districts in Manitoba.

Labour Code

Proposed changes to Manitoba's Labour Relations Act were announced in June. The changes included the right of the provincial Labour Board to reinstate a discharged employee pending arbitration, and revisions to the "final offer selection" provisions (an arbitiation procedure where the arbiter selects either labour's or management's package, but cannot alter it). Originally, final offer selection was to be initiated only when it was requested by labour, and not by management. After protest that this clause was unfair, this limitation was removed from the bill before presentation to the legislature. The bill allows the Manitoba Labour Board to become an antonomous body, streamlines the certification process, facilitates the process of organizing the labour

force, and expands the role played by government mediators. The bill came into effect 1 January 1985.

Marketing and International Trade

Throughout 1984, Manitoba Cabinet ministers undertook a variety of economic missions, seeking export markets. In the fall, a delegation travelled to China, South Korea and India, investigating the possibilities of selling potash abroad. The potash delegation included Premier Howard Pawley, Energy and Mines Minister Wilson Parasuik, and John Hansuld, president of Canamax Resources.

Taxation Matters Affecting the Industry

Corporation Income Taxes

Corporation income taxes in Manitoba remained at 16 percent in 1984. The small business rate also remained unchanged, at 10 percent. The budget of 24 April 1984 announced a manufacturing investment tax credit, which will provide a credit against corporate (or personal) income tax equal to 6 percent of investment in new buildings, machinery, or equipment to be used for manufacturing and processing and put in place between budget night and 3 December 1985.

Mining Taxation

There were no changes in legislation relating to mining taxation during 1984.

The Mining Tax Act imposes a tax of 18 percent on profits from mining and custom mineral processing activities in the province (including potash production), on both Crown and freehold land. A 5-percent investment tax credit is allowed, along with deductions for depreciation, exploration, and some processing expenses.

The Mines Act prescribes the fees for permits and licences for the mining industry and royalties on industrial and construction minerals.

9. ONTARIO

Introduction

The value of mineral production in Ontario continued to climb in 1984, reaching about $4.4 billion, up from about $3.6 billion in 1983, for an increase of 24 percent. The major factor in this increase was nickel, which rose in value of production from $550 million to $926 million. Even with the increased volume of production of nickel (up from 88,000 to 138,000 tonnes), both Inco and Falconbridge were operating below capacity during the year.

Uranium mining continued to be profitable, although, like base metal mining, it faced a competitive over-supplied world market. Denison Mines and Rio Algom at Elliot Lake operated at full capacity. Both companies are backed by long-term uranium purchase contracts and large reserves, as well as diversified operations.

Primarily due to its gold projects, Ontario was second in the country in terms of capital expenditure plans in 1984 (an estimated $428.6 million). Approximately 80 percent of these were directed towards the production of precious metals. Base metal capital spending was estimated at $66.2 million and uranium at $26.25 million.

Exploration expenditures for 1984 were approximately $200 million, up significantly from $106 million 1982.

Gold continued to be the bright spot in mineral exploration. Many established metal companies have diversified into gold, with the primary attraction remaining the Hemlo camp. By the fall of 1984, approximately 200 companies held claims in the region, which has been estimated to contain more than 100 million tonnes of ore and 20 million ounces of gold. Other regions of active gold exploration in Ontario include Cameron Lake, Detour Lake, Kirkland Lake, Larder Lake, Lower Manitou Lake, Red Lake, Sturgeon Lake, Sudbury, Swayze, Terrace Bay, the Trenton-Peterborough area, Wawa, Timmins and White River.

During the Conservative party's Ontario leadership race, mining received some attention when several of the contenders proposed the establishment of separate portfolios for mines and forestry. According to at least one proposal, a mines ministry should be based in northeastern Ontario, where it could be more sensitive to regional concerns.

Assistance to the Mineral Industry

Federal/Provincial Programs

The federal and Ontario governments signed the Canada/Ontario Economic and Regional Development Agreement on 2 November 1984. This new 10-year agreement, replacing one that expired March 31, may include a subagreement on mineral development. While discussions have been held, no subagreement was finalized by the end of the year.

Exploration Assistance

In February, Ontario's Board of Industrial Leadership and Development (BILD) program published details of new drill core libraries available in various locations across Ontario. These libraries store the results of previous drilling efforts and make them available later in order to stimulate mineral exploration.

The new Geoscience Information Centre of the Ontario Ministry of Natural Resources opened in Toronto, providing geoscience information on computer, as well as in hard copy, and on microfiche. The Centre provides Ontario exploration reports (about 25,000), mineral deposit files (7,000), plus three computer databases:

- Ontario Geoscience Data Index, with 6,900 reports and maps and 9,500 exploration reports;
- Mineral Deposit Investory (MDI) with 5,500 Ontario metallic and industrial mineral deposits;
- PETROCH, with information on some 17,000 rock samples collected by OGS geologists.

The Ontario Ministry of Natural Resources released new geophysical survey maps aimed at stimulating exploration and development northeast of Timmins. The survey encompassed 3,550 sq. kilometers of the Black River-Matheson area.

Research and Technology Assistance

The Ontario Research Foundation used its Pilot Plant No. 1 for a project to covert coal into a liquid substitute for fuel oils using the flash hydropyrolysis technique, a process also being researched in Alberta.

Regulation of the Mineral Industry

Mining

On 24 November 1983, Bill 129 to revise the Mining Act received first reading but was sent back for further revisions. The bill was still under study by the mining industry, ministry officials, and other interested parties at the end of 1984. The changes originally proposed in Bill 129 were primarily of an administrative nature, attempting to update, simplify and standardize mineral exploration regulations.

The Ontario Ministry of Natural Resources issued A Guide to Legislation Affecting Mining in Ontario, August 1984, providing detailed information on federal and Ontario statues and regulations affecting mining, agencies and government contacts, and on licences and other requirements. Prepared by Currie, Coopers and Lybrand, the 320-page volume provides an overview of all the legal requirements facing a mining operation in Ontario.

Health and Safety

Jurisdiction in Uranium Mines

In Ontario, as in all Canada, the federal government has exclusive jurisdiction to legislate in relation to uranium mines. The Ontario Ministry of Labour has jurisdiction with respect to worker health and safety in all non-uranium mines in the province. However, on 1 July 1984, the AECB filed a regulation under the Atomic Energy Control Act, incorporating the Ontario Occupational Health and Safety Act and its regulations, so that the Ontario act and regulations apply to conventional health and safety in Ontario uranium mines. The Ontario Ministry of Labour now administers occupational health and safety requirements in Ontario uranium mines under the new regulation, on behalf of the AECB, and is reimbursed for its services.

Ground Control and Emergency Preparedness

In July 1980, the Joint Federal-Provincial Inquiry Commission into Safety in Mines and Mining Plants in Ontario (Burkett Commission) was established and jointly funded by the federal and Ontario governments. This Commission examined the adequacy of existing arrangements and practices

that could affect the safety of workers in mines and mining plants, and made a total of 83 recommendations. The Commission's final recommendation was that a follow-up inquiry into the adequacy of safety practices and arrangements in Ontario mines and mining plants be undertaken within three years of the release of the report.

Rockburst and seismic activity during the summer of 1984 increased the significance of the Burkett Commission recommendations. On 30 July 1984, the Minister of Labour invited representatives of management and labour to review the recommendations put forward by the Commission, which had, as yet, not been fully implemented and to determine how to structure any follow-up activity. As a result of this meeting, an ad hoc labour-management committee was formed which recommended, among other things, that a focused inquiry be undertaken into the subjects of ground control and emergency preparedness. On 25 October 1984, the Minister of Labour established a labour-management committee to investigate these important issues. A final report from this committee is expected in June 1985.

Designated Substances Regulations - Arsenic and Cadmium

The Occupational Health and Safety Division of the Ministry of Labour develops strategies to control worker exposure to toxic substances and agents in the workplace. Under the Occupational Health and Safety Act, designated substance regulations are being developed that set out comprehensive strategies to control worker exposure to potentially harmful substances. Nine regulations are in effect, to protect workers from harmful exposure to acrylonitrile, asbestos, benzene, coke oven emissions, isocyanates, lead, mercury, silica and vinyl chloride. The ministry is currently developing designated substances regulations for two substances affecting the mining industry - arsenic and cadmium. A proposed regulation for arsenic was published in August 1983; briefs and comments have been received from interested parties, and a public meeting was held. The main issue still being considered is whether or not underground mines should be included in the arsenic regulation. Once this matter is resolved and the consultative process is completed, the regulation will be filed.

A health effects document concerning cadmium has been completed and shared with interested parties for comment. Once these comments are received and reviewed, a proposed regulation will be published for comment.

Royal Commission on Asbestos

In May 1984, the Report of the Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario was tabled in the legislature by the Minister of Labour. This commission was appointed in 1980 to investigate matters of health and safety in relation to worker exposure to asbestos. The 3-volume report included 113 recommendations. The Occupational Health and Safety Division established task teams to review groups of recommendations, which were then presented to the division's Legislative Review Committee for consideration. An interministerial committee was also established, with representation from the ministries of Health, the Environment, Consumer and Commercial Relations, Municipal Affairs and Housing, and Education, to coordinate responses for those recommendations which had implications beyond the Ministry of Labour.

The commission expressed strong support for the concept of internal responsibility, which is at the heart of the Occupational Health and Safety Act. One major recommendation of the commission was that a Designated Substance Enforcement Unit should be formed. The Minister has accepted this recommendation and the ministry is now in the process of establishing this unit. Many of the commission's recommendations were directed to the Workers' Compensation Board, and some of these have already been included in the new Workers' Compensation Act.

Worker's Compensation

A new Worker's Compensation Act was passed in December 1984, and will take full effect on 1 July 1985. Among the provisions are changes in assessments and procedures, including an assessment rate increase of 15 percent per year in the nickel sector and a 17-percent earnings ceiling increase. The assessment could raise the cost of Worker's Compensation per employee from $2,300 in 1984 to as much as $4,600 by 1987.

Infrastructure

Due to increased costs in nuclear generators, fuel, material and labour, Ontario Hydro announced plans to increase its rates in 1985 by 8.6 percent and more for heavy industrial users. The proposed increases would have a significant effect on such industries as Inco and Falconbridge, which are among the heavier users of electrical power.

Environmental Regulation

Ontario Hydro announced plans to test a new technology that is aimed at reducing acid-gas emissions at coal-fired plants. The $2.4 million pilot project is to be tested in the fall of 1985 at the Lakeview generating station. It is estimated that it will reduce sulphur dioxide emissions by 40 to 50 percent and nitrogen oxides by 20 to 30 percent.

Disposition of Mineral Rights

An area with high potential for precious metal mineralization has been under dispute as the result of a native land claim. At issue was 4000 square miles of land near Colbalt, Ontario. A caution was registered in 1973 by the Bear Island Indian Band, covering all land transactions in the disputed area. A December 11 Supreme Court ruling stated that the Band's interest in the land is limited to traditional activities such as hunting, fishing, and trapping, and confirmed the province's right to sell and lease the land. The decision is being appealed.

Marketing and International Trade

The South African government called for an investigation under the General Agreement on Tariffs and Trade (GATT) into Ontario's tax practices regarding sales of the Canadian Maple Leaf gold coins. While abolishing the provincial sales tax on domestically-produced coins, the Ontario government continued to apply it to those from other countries, allegedly violating GATT's free-trade rules.

Taxation Matters Affecting the Industry

In the May budget, it was announced that a government discussion paper reviewing taxation in the mining industry would be forthcoming. A main concern of the mineral producers is that the existing graduated mining tax cuts into earnings which, they claimed, would otherwise be invested in new exploration and development. By the end of the year the discussion paper had yet to be released.

The Income Tax Act was amended, to bring its provisions closer to those of the federal Income Tax Act.

Corporation Income Taxes

The general rate of corporation income tax remained at 15 percent; the rate on income from manufacturing, processing and mining was 14 percent.

The calculation of taxable income in Ontario varies in several respects from the federal regime. For example, foreign resource properties are eligible for capital gains treatment in Ontario, in the event of disposition. Depletion is "automatic" rather than earned in Ontario, and a 100-percent deduction is allowed for exploration and development expenses (cost of mining properties). The 25-percent resource allowance is not deductible in calculating taxable income for Ontario corporate income tax.

Mining Taxation

Ontario has a graduated mining tax on profits. The Mining Tax Act specifies rates varying from 15 percent of mining profits over $250,000 to a maximum of 30 percent of profits over $20 million. Fiscal incentives are offered for mineral exploration and for mineral processing. Exploration and development expenses are 100 percent deductible and such expenses may be carried forward. A processing allowance is available, within specified limits on income, varying from 8 percent to a high of 30 percent where the company operates a semi-fabricating plant in northern Ontario. Except in northern Ontario, the allowance may not exceed 65 percent of mining and processing income after expenses. Unused processing allowances may also be carried forward.

In Ontario, as in all provinces except British Columbia, income is generally aggregated for tax purposes. However, for new or major expansions of existing mines, disaggregation is available which ensures that no tax is paid until the capital costs are recovered. In addition, each mine then qualifies for its own graduated tax rate scale, allowing income from the new mine to be taxed at lower marginal rates.

The Mining Act sets fees for licences and permits, as well as a royalty and an acreage tax on certain mining lands.

10. QUEBEC

Introduction

Quebec led the country in total capital expenditures in the minerals industry for 1984. Of the $578 million spent, $230 million was assigned to gold and silver projects. In addition, close to $850 million was spent on aluminium potlines. The value of mineral output remained unchanged from the previous year, at about $2 billion.

Due to the depression of the steel industry, the recession, and concern about asbestos-related health and environmental hazards, Quebec's iron ore and asbestos industries were forced to undergo further rationalization. Value of production of both commodities fell slightly, although iron ore production volume rose substantially. The copper industry also suffered from low world prices, but production fell only by 3 percent. Many operators decided to invest in new facilities or to modernize their existing facilities and concluded agreements with the Quebec government, which offered them financial assistance that could reach up to 20 percent of investment costs.

Gold is the leading metallic mineral in terms of exploration and new developments in Quebec. Activities are located primarily in the northwest, but there is growing interest in the south as well. In 1984, three new gold mines began production; Sigma 2 and Chimo (near Val-d'Or) and Lac Shortt (near Chapais). However, falling gold prices led to problems for a number of high-cost producers by the end of the year.

Some strikes occurred in 1984: for example, in summer at Falconbridge Copper's Opemiska Division (Chibougamau area), and in autumn at Niobec's mine (near Chicoutimi).

Throughout the year, the Quebec government carried on its multifaceted program of support for mineral exploration, development, and ongoing operations. Support took the form of government exploration programs, direct grants to the private sector, tax incentives, and job creation programs.

Reorganization of the Mines Sector of the Ministère de l'Énergie et des Ressources (MER) was approved by Cabinet on 20 March 1984. The reorganization was accompanied by a reorientation of assistance programs towards a policy of cost-sharing with the industry.

Direct Investment or Equity Participation

Sidbec-Normines Inc. (50.1 percent owned by the provincially-owned Sidbec, 41.76 percent by British Steel Corporation and 8.23 percent by La Compagnie minière Québec Cartier) continued to experience losses in 1984, and closed its mine at Fire Lake and concentrator at Gagnon. Part of the production of concentrates from Mount Wright will be converted into pellets at the Sidbec-Normines plant located in Port-Cartier, which Québec Cartier is renting and operating.

The provincially-owned Société nationale de l'amiante (SNA) also continued to experience problems as a result of weak markets. The Thetford, Asbestos Hill, and Black Lake facilities of one of its operating companies, Société Asbestos Limitée (SAL), were affected by the drop in world consumption. In November, SAL announced a staged layoff of 800 workers. The temporary shutdown was its fourth in the year. By the end of the year, SAL accepted in principle the proposal of merging its operations with SNA's other operating company, Les Mines d'Amiante Bell Ltée.

A proposal was presented by the Asbestos local of the Syndicat National de l'Amiante that would allow designated workers to retire early and receive unemployment benefits, in order to make way for younger miners. (A federal program is already in effect which enables certain older workers to receive unemployment benefits until they are 65 years old, if they have been laid off.)

Assistance to the Mineral Industry

Federal/Provincial Programs

The new Canada/Quebec Economic and Regional Development Agreement (ERDA) was announced in December. While the main thrust of the program concerned strengthening Quebec's industrial sector, mining was also considered a priority. Details of mining subagreement were still under discussion at the end of the year.

Direct Financial Assistance

Exploration

The Quebec government's Mineral Exploration Financial Assistance Program, introduced in 1984, is designed to

stimulate exploration for certain minerals in designated areas. It is slated to continue until 31 March 1987. The program offers grants which vary according to the region involved, the nature of the work, and the minerals sought. Over $1 million was paid out in 1984. The key minerals and areas targeted are copper and zinc in Abitibi, all minerals in Gaspésie (except construction materials and oil and gas), and all minerals in the Labrador Trough (except iron ore, construction materials, and oil and gas).

MER announced plans to open new regional offices in 1985, in Montreal and Sherbrooke.

Mine Development and Processing

Under the Private Investments Acceleration Program (PIAP), launched in May 1983, the provincial government offered grants in order to achieve earlier start-up of projects planned for future years. Generally, the subsidies can reach 14 percent of expenditures incurred in Quebec on machinery and equipment, and 20 percent of expenditures on construction, infrastructure, and research and development. The assistance extended was as follows:

- Bishop Fibretek, $1.2 million towards a mineral wool plant (total investment: $6 million);

- Selco Ltée (a Ressources BP Canada Ltée div.), $25 million towards the construction of a power line linking Mines Selbaie to the Hydro-Québec network. Selco Ltée has undertaken a $125-million program to expand its copper and zinc operations and bring a new orebody into production;

- Corporation Falconbridge Copper, $25 million towards a $125-million development and exploration program at its Ansil copper deposit;

- Exploration Muscocho Ltée, $1 million towards the consolidation and expansion of its mining activities in Montauban (total investment: $5.6 million);

- Les Mines Camchib Inc., $3 million towards the development of new reserves (total investment: $25.3 million);

- Les Mines d'Argent Abcourt Inc., $2.2 million towards the development of its project (total investment: $12 million);

- Mines d'or Lac Bachelor Inc., $600,000 to extend its gold mine (total investment: $5 million);

- Mines Northgate Patino Inc., $1.6 million to assist in the development of new reserves (total investment: $9.5 million);

- Mines Sullivan Inc., $4.5 million to assist in the reopening of the Eldrich mine (total investment: $44 million);

- Produits Forestiers MacLaren Inc. (div. Mines Gaspé) - subsidiary of Noranda Inc. - in Murdochville was granted a 4-year $13 million subsidy for the development of new reserves (total investment: $72 million);

- QIT-Fer et Titane Inc., $25 million towards a $154-million program to improve the furnaces of its existing plant and build a plant designed to produce semi-manufactured steel;

- Ressources Aiguebelle Inc., close to $4,800,000 towards its gold expansion project and erection of a concentrator (total investment: $27 million);

- Société Minière Louvem Inc., $900,000 towards the development of new reserves at its new Chimo mine (total investment: $10.4 million).

The program should help to generate private-sector investment of about $700 million.

Exploration Services

In 1984, 74 geological exploration projects were undertaken by MER at a cost of $7.3 million. Activities were concentrated in the Labrador Trough, Gaspésie and Estrie.

The Ministry of Natural Resources in New Brunswick and the Geological Survey of Ontario asked Quebec's MER to help establish a program similar to the Système National de Référence Cartographique (SNRC) in Quebec. The information included in this reference program gives all the pertinent geoscientific information on public mineral exploration, university theses, government publications and relevant specialized articles.

Research and Technology Assistance

The government committed $2.6 million to mineral research in 1984/85; R & D is conducted and managed by the Centre de Recherches Minerales du Quebec (CRM) on specific projects put forward by private firms; the companies are only billed 30 percent of incurred expenditures. While CRM looks at mineral resources in general, it has focused increasingly on gold and close to $1 million was spent in this field in 1984. Work by CRM has been carried out in collaboration with iron ore producers of Nouveau-Québec and Côte-Nord ($800,000 in assistance), the producers of gold and other metals at Val-d'Or, Rouyn, Matagami and Chibougamau ($1 million), industrial mineral producers in the Estrie and Montreal regions ($200,000) and the producers of tantalum and other rare metals in the Chicoutimi region ($500,000). Research contracts with CRM awarded to universities and École Polytechnique came to $400,000 in 1984-85.

MER launched its new 3-year job-creating Program of Assistance for the Technological Development of the Mining Industry through the Hiring of Specialists. The program provides up to $25,000 for each new employee that qualifies; it aims at increasing productivity by assisting companies in the hiring of mineral industry specialists (and business administration specialists for small companies).

Regulation of the Mineral Industry

Environmental Regulation

Growing concern over the issue of acid rain led the Quebec Ministère de l'Environnement to introduce tougher antipollution regulations. Noranda's copper smelter at Rouyn, a major source of SO_2 emissions, was ordered to reduce them by 40 percent. The Quebec government pledged $1.2 million towards a feasibility study to look into modernizing the smelter and reducing emissions to 550,000 tons of SO_2 a year. Financial assistance from the federal government was also being sought. The smelter faces the possibility of closure, putting 1,200 people out of work, if installation and operating costs of the required pollution controls prove to be too high.

Taxation Matters Affecting the Industry

The Quebec government is preparing a White Paper on Personal Taxation which is expected to be completed in 1985. The stated aim of the tax reform is to lower Quebec tax rates and bring them closer to those in effect in Ontario. The province has also introduced a number of changes to harmonize provincial and federal tax measures.

Premier Levesque announced, in his opening speech before the National Assembly on 16 October 1984, that the government will introduce major changes to the Mining Duties Act during the coming session.

Corporation and Personal Income Taxes

The effective corporation income tax rate for large companies engaged in mining, mineral processing, prospecting, exploring or drilling for minerals in Quebec was reduced from 8 percent to 5.5 percent on 1 January 1983 and remained at that level in 1984. This followed the 1982 reduction from 13 percent to 8 percent.

In addition, Quebec allows the deduction of earned depletion for eligible exploration expenditures incurred after 19 April 1983 from income from all sources in Quebec, up to a maximum of 33 1/3 percent of such income (compared to 25 percent for Revenue Canada), not just from resource profits. From 1 April 1983, an individual can deduct, in computing his taxable income, 166 2/3 percent of all eligible exploration expenses.

Retail Sales Tax

To avoid double taxation of railway equipment in more than one province, application of the retail sales tax on freight cars, spare parts and maintenance equipment was modified to ensure that it applies only to their use in Quebec.

Mining Taxation

Quebec imposes a graduated tax on all profits from mining operations in excess of $250,000. Under the Mining Duties Act, tax rates rise from 15 percent to a maximum of 30 percent on profits over $20.25 million. The province also offers fiscal incentives for exploration and processing of ore in Quebec. As noted above, the Act is under revision.

11. NEW BRUNSWICK

Introduction

The New Brunswick mining industry performed well in 1984, producing minerals valued at $590 million, up from $506 million in 1983. The major source of the increase resulted from improved zinc prices, as a small increase in volume (less than 10 percent) led to an increase in value of production from $258 to $346 million.

New developments are coming on fast in New Brunswick, which ranked third in Canada in 1984 in terms of capital expenditures in mining, with a total of $166 million. Denison expects to bring a potash mine and mill into production in the near future, following the opening by Potash Company of America last year, and a third potash prospect is in a preliminary stage of investigation by B.P. Canada.

Due to rising world prices and demand, Durham Resources announced plans to reopen its antimony mine at Lake George near Fredericton; this is one of the largest antimony orebodies in the world. Durham anticipates being in production by September 1985, putting 110 people back to work. The mine has been closed for four years.

Assistance to the Mineral Industry

Federal/Provincial Programs

A $22.7-million federal/provincial mineral development agreement was announced in 1984, designed to stimulate and diversify New Brunswick's mining sector, mainly in the areas of geology and metallurgy. The province's contribution will be $7.3 million. Exploration interest will be concentrated on such minerals as base metals, tin and tungsten. Research will aim at improving the extraction and processing of such minerals as base metals and manganese, as well as marketing and feasibility studies. New Brunswick's contribution to the geoscience programs will include:

- metallogenic studies of selected metallic mineral deposits;
- geological mapping of selected areas, particularly the northwestern part of the province;
- geoscience studies, compilation and publication of geoscientific data, and expansion of drill core storage and retrival facilities.

In technology studies, the province will evaluate dewatering effects in coal strip mining, and look at the geochemistry of peat. Commodity studies will be prepared, and a major effort will be put into resource management strategy studies and surveys to evaluate potential development opportunities for minerals such as hydrocarbons, oil shales, potash, aggregates, peat, potassium, and sodium sulphate. More details of the agreement can be found in chapter 3.

Regulation of the Mineral Industry

New Brunswick's Mining Act is in the process of being revised, and comments have been solicited from various associations affected by this legislation. The revised Act is expected to be introduced early in 1985.

Taxation Matters Affecting the Industry

A number of major tax changes were proposed in the budget presented 17 April 1984. The most significant proposal affecting mining was the change in tax on net profits from metallic minerals: the 16-percent flat mining tax rate on annual net profits over $100,000 was to be replaced by a new graduated tax formula. Beginning with a 16-percent level of taxation for those mining companies whose net profits were between $100,000 and $3 million, taxes were to be increased to 20 percent for profits between $3 million and $10 million, 25 percent for profits between $10 and $20 million, and finally 30 percent for all profits over $20 million. However, in response to the mining industry's strenuous opposition, the new tax proposals were deferred for further consideration, and dropped in the 1985 budget.

The minister also announced the general terms of a proposed departmental review of the entire provincial tax system.

Corporation Income Taxes

The corporation income tax rate increased from 14 percent to 15 percent, effective 1 January 1984. The small business tax, formerly 9 percent, was abolished. This measure was to be reviewed before the 1985 budget.

Mining Taxation

The Metallic Minerals Tax Act taxes mine operators at a rate of 2 percent of net mining revenue. In addition to this 2-percent royalty, operators with annual net profits over $100,000 pay a tax of 16 percent of profits. Eligible exploration expenses can be deducted at the rate of $1.50 for every $1 spent, and 25 percent of eligible process research expenditures may be deducted as a credit. A number of nonmetallic minerals are exempted from the provisions of this act.

As noted above, the changes to the Metallic Minerals Act proposed in the April budget were withdrawn.

12. NOVA SCOTIA

Coal is the leading mineral in Nova Scotia, which in 1984 produced about 3 million tonnes of Canada's total production of 56.8 million tonnes. The province is Canada's leading producer of gypsum and barite. The Nova Scotia mineral industry will be further boosted by the development of North America's first primary tin mine, a $170-million project of Rio Algom Limited which is slated to come on stream by January 1986, with a planned capacity of 9000 tpd.

Mineral exploration expenditures for 1984 in the province were estimated at $5 million. A revived interest in gold was evident, particularly at former gold properties.

Northumberland Mines has been studing the feasibility of heap leaching and vat leaching for recovery of gold at its open pit prospect at Cochrane Hill. Capital costs are estimated at $3.2 million.

At the Cape Breton Development Corporation (CBDC), federal funding of about $300 million has been promised for 3 coal projects.

Direct Investment or Equity Participation

Scotia Mineral Exploration Venture announced spending plans of $3 million for gold exploration over three years. Equal partners in the venture are Inco Ltd., Kennco Exploration (Canada) Ltd., Husky Oil Operations Ltd., and Canadian Offshore Resources Exploration Ltd. (COREL), 53-percent owned by the provincial Crown corporation, Nova Scotia Resources Ltd.

Assistance to the Mineral Industry

Federal/Provincial Programs

In June, a 5-year $27-million federal/provincial agreement on mineral development was announced. The fundamental objective of this program (to which the federal government committed $16.1 million and the Nova Scotia government $10.8 million) is to strengthen the mineral industry as an instrument for regional economic development. The focus of the project will be on geoscientific work, mineral technology, and economic development. Nova Scotia's sedimentary basins will be analyzed and assessed for such minerals as copper, lead, zinc, potash, coal and oil shales. In an

effort to diversify and strengthen mineral production, selective market and feasibility studies will be undertaken. The federal and provincial governments also agreed to promote the transfer of technology and industrial innovation to bolster the province's industries. The provincial activities under the agreement will be in the following areas: geoscience program, including evaluation of onshore petroleum potential and inventory of oil shale data; mineral deposit studies of selected known deposits of metallic and industrial minerals; regional geological surveys; quaternary, geochemical and geophysical studies; provision of core storage facilities and other geoscience data compilation and publication; and commodity-specific studies and testing, mainly of industrial minerals. Further details are given in chapter 3.

In the fall, it was announced that an additional grant of $750,000 from the Canada-Nova Scotia Oil Substitution and Conservation Agreement Fund would be given to the Scotia Coal Synfuels project (a consortium of private and Crown corporations). The project's objective is to test a new two-phase coal liquefaction process in order to produce synthetic crude oil from Cape Breton Coal by the 1990s. If the tests (to be completed in 1985) are deemed successful, the project could go ahead producing more than 350,000 barrels of refinery feedstock per day. It has been estimated that this undertaking could create 2,500 construction jobs and 750 permanent jobs, as well as more than 1,000 jobs to mine and transport the required feedstock of 7,000 tonnes of coal a day.

Human Resource Assistance

In April the Attorney General announced the introduction of a bill for the disbursement of the $650,000 pension fund for members of Dominion Coal Worker's Relief Association between 1919 and 1965 (after 1965, a new pension plan was introduced). As many as 2,000 miners could share in the plan.

Marketing Assistance

In the spring, CBDC and the Nova Scotia Power Corporation (NSPC) reached a 5-year agreement on coal supply for thermal generation. CBDC will supply NSPC with 2.3 million tonnes of coal annually. More than half the coal will be used at the Lingan Generating Station. In an effort to

improve its troubled financial situation, CBDC will increase the price of coal by 40 percent the first year, 5 percent the second year, and will keep pace with inflation the following years. NSPC will be taking almost 2/3 of CBDC's production. This pricing arrangement is part of a 35 year agreement due to expire in 2010.

Regulation of the Mineral Industry

The moratorium on uranium exploration which began in 1982 continued throughout 1984, pending release of a report from a one-man commission of inquiry into all aspects of uranium mining and exploration. All companies actively exploring for uranium before the moratorium were permitted to retain their interest without further assessment work on properties held at the time. However, mineral exploration for all minerals, not only uranium, has been brought to a halt on more than 500,000 acres of land. (The report was released early in 1985, and although it recommended a 5-year extension of the moratorium, it did suggest permitting exploration for other minerals on currently alienated land.

Taxation Matters Affecting the Industry

The province appointed a Task Force on Investment and Taxation, to study the effects of provincial and municipal taxation in Nova Scotia on the province's business and investment environment. Federal taxation and private sector consultation will also receive consideration by the task force.

Corporation Income Tax

Corporation income taxes in Nova Scotia remained at 15 percent in 1984, with small businesses taxed at 10 percent. For 1984 and subsequent tax years, a tax credit has been introduced. The credit is equivalent to 10 percent of those research and development expenditures that are deemed eligible for the federal investment tax credit.

Mining Taxation

The Gypsum Mining Income Tax Act sets a rate of 33.3 percent payable on income over $5,000 from gypsum extrac-

tion or production. Alternatively, a rate of 18 cents per tonne mined may be used. In addition, higher rates may be set by order-in-council.

For minerals other than gypsum, royalties are prescribed under the Mineral Resources Act. Rebates are provided for several nonmetallic minerals, on the condition that tney are processed in the province. However, if unrefined minerals are shipped out of the province, Cabinet may impose up to three times the normal royalty. The royalty rates and method of calculation vary from mineral to mineral, and include 25 cents per short ton for coal, 12 cents per short ton for barite, 1 percent of net value for gold and silver, and 2 percent for limestone. For most metallic minerals, royalties may be the greater of 15 percent of profit, or 2 percent of net smelter returns (and are subject to change by order-in-council). This royalty structure is currently under review.

The Mineral Resources Act was amended in 1984, permitting the claiming of accelerated depreciation on capital assets in determining the net income on which royalties are levied. All capital costs except post-production mine access capital costs have been made 100 percent deductible against new mine income during the first three years of operation, and deductible at 30 percent per year on a straight-line basis thereafter. Previously, the deductions was 15 percent per year on a straight-line basis. Post production capital costs continue to be deductible at 100 percent.

Fees and conditions for licences and leases are also established by the Mineral Resources Act. In late 1983 fees for claim applications, development licences, and mining leases were doubled, and payment in lieu of work increased from $150 to $200 per claim.

Retail Sales Tax

Machinery and equipment used in research and development was declared exempt from provincial sales tax in the budget of 23 March 1984.

Special Legislation for Rio Algom

The Rio Algom Limited Municipal Taxation Act, Bill 85, was passed in 1984, fixing an escalating municipal tax schedule until the year 2000 for the facilities of Rio Algom's new tin mine and associated facilities and property.

13. PRINCE EDWARD ISLAND

To date, Prince Edward Island's contribution to Canada's mineral production has come from its sand and gravel (aggregates) industry. Value of production in 1984 was about $.9 million, up from 1983, but down sharply from the 1982 total of $1.8 million. Discussions were in progress over the year regarding possible federal support for a small program directed at exploitation of offshore aggregates. The province at present imports aggregates.

In hopes of stimulating some hard-rock exploration, in 1984 the government of Prince Edward Island released a publication called the Geology of Prince Edward Island. In past years, there has been some exploration for uranium, copper and gold.

14. NEWFOUNDLAND

The mining sector in Newfoundland continued to be affected by the depressed condition of the iron and steel industry in the United States. Although iron ore still accounts for almost 90 percent of the value of the province's mineral production, output volume has been reduced since the previous decade. Value of production for the province has, however, continued its recovery in recent years, reaching nearly $1 billion in 1984. In current dollar terms at least, this is close to the peak year, 1979, ($1.1 billion) and far ahead of 1982, at $.65 billion. Iron Ore Company of Canada was able to turn a profit in 1984, and increased production by 16 percent over the previous year.

Asarco Inc. of New York and Abitibi-Price Inc. of Toronto announced the closure of their copper/lead/zinc mine at Buchans because of exhausted reserves. On a more positive note, Minworth Ltd. of the U.K. began a $14-million construction project in order to redevelop the St. Lawrence fluorspar deposits. Mining had ceased at St. Lawrence in 1977.

Mineral exploration increased significantly over 1983 levels. Selco Mining Division of BP Canada announced a gold discovery in August at Cinq Cerf Brook, and planned a $3.2-million exploration program to be completed by mid-1985. Further encouraging results by year-end led to plans for expenditures of an additional $6 million on the property in 1985. New Ventures Equity spent $750,000 in 1984 on underground development to test the Cape Ray gold prospect near Port aux Basques.

Assistance to the Mineral Industry

Federal/Provincial Programs

In the spring a $22-million federal/provincial mineral subagreement was announced. The agreement focuses on geological, geochemical and geophysical surveys, research and technology, and economic development studies. A testing program for iron ore pelletizing is one of the projects included in the mineral technology sector of the agreement. The economic development studies will focus on industrial minerals, and on competition and productivity.

The agreement is aimed at diversifying and developing the mineral industry and stimulating investments and economic development. The federal contribution is $15.4 mil-

lion, and Newfoundland will contribute $6.6 million. The provincial activities will concentrate on bedrock mapping in areas of known or anticipated mineral potential. In recognition of the expertise of the province's bedrock mapping geologists, this program will be jointly funded by the federal and provincial governments, but carried out by the province alone. This is in contrast to the other programs in this and other provincial agreements, which are separately funded and delivered. Further details of the subagreement are given in chapter 3.

The federal and provincial governments have also agreed to spend $4.76 million and $2.07 million respectively on redevelopment of the St. Lawrence fluorspar deposits. Mining, which ceased in 1977, is expected to resume in 1985. The permanent workforce is estimated at between 80 and 100. The project is owned by St. Lawrence Fluospar Ltd., a subsidiary of Minworth Ltd.

Regulation of the Mineral Industry

A provincial labour tribunal ruled that Wabush Mines Ltd. failed to give adequate notice of its 3-week shutdown in 1981, and ordered the company to pay $1 million compensation to its employees. The company appealed the ruling.

The case came about as a result of an ambiguity in Section 53 of the 1978 Labour Standards Act, which does not specify whether termination of work refers to permanent or temporary layoffs. By year-end, the Newfoundland government amended the act, retroactive to 1978, in hopes of preventing further claims which could have lead to bankruptcy for some companies.

Taxation Matters Affecting the Industry

Corporation Income Tax

The corporate income tax rate in Newfoundland was 16 percent for large corporations, unchanged from 1983. The budget of 21 March 1984 included a reduction of the small business corporate tax rate, from 12 percent to 10 percent, effective 1 January 1984.

Mining Taxation

Under the Mining and Mineral Rights Tax Act, mining operations (excluding Iron Ore of Canada, which has its own special legislation) are taxed at the rate of 15 percent on income derived from mining. In addition, a mineral rights tax of 20 percent is imposed on revenue received by landlords from mining operations leased to third parties.

The Mineral Holdings Impost Act levies a tax on mineral holdings which is designed to encourage mineral exploration and development. The rate is $3.00 per hectare per year, and it may be reduced for Crown rentals paid and for eligible exploration and predevelopment expenditures.

The Mineral Holdings Impost Regulations 1978 were amended to set the rate of interest on taxes and penalties owing for 1983 at 17.12 percent, down from 18.37 percent.

Bill 46 to enact the Baie Verte Mines Inc. (Tax Exemption) Act, received Royal Assent on 19 December 1984. The act is retroactively effective from 3 September 1982, and its provisions include an exemption from retail sales taxes on certain purchases for mining operations. The exemption does not apply to capital replacements not related to expansion, nor to spare parts or replacement articles, nor to gasoline and fuel taxes.

PRINCIPAL WRITTEN SOURCES

The Canadian Mineral Industry Monthly Report, Department of Energy, Mines and Resources, Ottawa.

Canadian Mining Journal, Southam Business Publications, 1450 Don Mills Road, Don Mills, Ontario (monthly).

Canadian Mining Taxation, Price Waterhouse, Toronto, 1983.

Canadian Tax Journal, Canadian Tax Foundation, 130 Adelaide Street West, P.O. Box 6, Toronto, Ontario M5H 3P5 (bi-monthly).

CIM Bulletin, The Canadian Institute of Mining and Metallurgy, 400-1130 Sherbrooke Street West, Montreal, Quebec H3A 2M8 (monthly).

Coal Focus, The Coal Association of Canada, Suite 301, 1000 Eighth Avenue S.W., Calgary, Alberta T2P 3M7 (monthly).

Financial Post, 777 Bay Street, Toronto M5W 1A7 (weekly).

The Globe and Mail, 44 Front Street West, Toronto M5V 2S9 (daily).

The Inco Clipper, Inco Limited's internal clipping service.

Mining Magazine, The Mining Journal Limited, 15 Wilson Street, London EC2M 2TR, England (monthly).

The Northern Miner, 7 Labatt Avenue, Toronto, Ontario M5A 3P2 (weekly).

The PDA Recorder, Canadian Mining Journal, Southam Business Publications, 1450 Don Mills Road, Don Mills, Ontario (eight times a year).

Mining Journal, The Mining Journal Limited, 15 Wilson Street, Moorgate, London EC2M 2TR, England (weekly).

Provincial and Municipal Finances 1984, Canadian Tax Foundation, Toronto, 1984.

Tax Memo: 1984 Tax Developments, Canadian Tax Foundation, Toronto, March 1985.

General - Federal and provincial government press releases, statements, speeches, and publications, etc., and publications, briefs and statements from mining associations and companies.

GOVERNMENT SOURCES FOR FURTHER INFORMATION

Federal Departments

Department of Energy, Mines and Resources

Mineral Policy Sector
580 Booth Street
Ottawa, Ontario K1A 0E4
(613) 995-9466

Canada Centre for Mineral and Energy Technology
(CANMET)
555 Booth Street
Ottawa, Ontario K1A 0G1
(613) 995-4179

Department of Indian Affairs and Northern Development
19 Wellington Street, North Tower
Hull, Quebec K1A 0H4

Northern Resources and Economic Planning Branch
(819) 997-9190

Mining Management and Infrastructure Directorate
(819) 997-9828

Employment and Immigration Canada
Manpower Planning, Mining
Place du Portage, Phase IV
140 Promenade du Portage
Hull, Quebec K1A 0J9
(819) 994-6701

Department of Regional Industrial Expansion
Metals and Minerals Directorate
235 Queen Street
Ottawa, Ontario K1A 0H5
(613) 992-5672

Environment Canada

Federal Environmental Assessment Review Office
Fontaine Building
Ottawa, Ontario K1A 0H3
(613) 997-1000

Environmental Protection Service
Les Terraces de la Chaudiere
Hull, Quebec K1A 0H3
(819) 997-1575

Department of Finance
Tax Analysis, Energy and Mining
Place Bell Canada
160 Elgin Street
Ottawa, Ontario K1A 0G5
(613) 992-4836

Labour Canada
Occupational Safety and Health
Ottawa, Ontario K1A 0J2
(613) 997-3520

Federal Crown Corporations and Agencies

Atomic Energy Control Board
Martel Building
270 Albert Street
P.O. Box 1046
Ottawa, Ontario K1P 5S9
(613) 995-6941

Atomic Energy of Canada Ltd.
Standard Life Building
275 Slater Street
Ottawa, Ontario K1A 0S4
(613) 237-3270

Cape Breton Development Corporation
P.O. Box 1330
Sydney, Nova Scotia B1P 6K3
(902) 539-5910

Eldorado Nuclear Ltd.
255 Albert Street, Suite 400
Ottawa, Ontario K1P 6A9
(613) 238-5222

Export Development Corporation
110 O'Connor Street
P.O. Box 655
Ottawa, Ontario K1P 5T9
(613) 237-2570

Foreign Investment Review Agency
240 Sparks Street
Ottawa, Ontario K1P 6A5
(613) 995-9449

National Harbours Board (Ports Canada)
320 Queen Street, Tower A
Place de Ville
Ottawa, Ontario K1A 0N6
(613) 996-6400

Provincial Government Departments and Agencies

British Columbia

Ministry of Energy, Mines and Petroleum Resources
Mineral Resources Division
617 Government Street
Victoria, British Columbia V8V 1X4
(604) 387-6242

B.C. Hydro and Power Authority
970 Burrard Street
Vancouver, British Columbia V6Z 1Y3
(604) 663-2212

Ministry of Finance
Economics and Policy Division
Parliament Buildings
Victoria, British Columbia V8V 1X4
(604) 384-4434

Alberta

Department of Energy and Natural Resources
Mineral Resources Division
9915 - 108th Street
Edmonton, Alberta T5K 2C9
(403) 427-2739

Saskatchewan

Department of Energy and Mines
Toronto Dominion Bank Building
1914 Hamilton Street
Regina, Saskatchewan S4P 4V4
(306) 787-2526

Department of Labour
Toronto-Dominion Bank Building
1914 Hamilton Street
Regina, Saskatchewan S4P 4V4
(306) 787-2429

Environment Saskatchewan
1855 Victoria Avenue
Regina, Saskatchewan S4P 3V5
(306) 787-6113

Potash Corporation of Saskatchewan
410 - 22nd Street East
Saskatoon, Saskatchewan S7K 5T7
(306) 664-5530

Saskatchewan Minerals
Chaplin, Saskatchewan S0H 0V0
(306) 395-2561

Saskatchewan Mining Development Corporation
122 - 3rd Avenue North
Saskatoon, Saskatchewan S7K 2H6
(306) 664-5000

Manitoba

Department of Energy and Mines
Mineral Resources Division
555 - 330 Graham Avenue
Winnipeg, Manitoba R3C 4E3
(204) 945-6580

Manitoba Mineral Resources Ltd.
603 - 491 Portage Avenue
Winnipeg, Manitoba R3B 2E4
(204) 786-7419

Department of Finance
Taxation Division
103 Legislative Building
Winnipeg, Manitoba R3C 0V8
(204) 944-3761

Ontario

Ministry of Northern Affairs and Mines
Mineral Resources Group
Whitney Block, Parliament Buildings
Toronto, Ontario M7A 1W3
(416) 965-4271

Ministry of Treasury and Economics
Frost Building South
Queen's Park
Toronto, Ontario M7A 1Y7
(416) 965-7171

Quebec

Ministère de l'Énergie et des Ressources
Direction de la Politique et de l'Evaluation
1620 Boul. de l'Entente
Québec, Québec G1H 6R3
(418) 643-4617

Société Québécoise d'Exploration Miniere
(SOQUEM)
3108 chemin Ste-Foy
Sainte Foy, Québec G1X 1P8
(418) 658-5400

Société Nationale de l'Amiante
850 Boul. Ouellet Ouest
Thetford Mines, Québec 6G6 7A5
(418) 338-0131

Ministère des Finances
1025 St. Augustin
Québec, Québec G1R 4Z6
(418) 643-4426

New Brunswick

Department of Natural Resources
Mineral Resources Division
P.O. Box 6000
Fredericton, New Brunswick E3B 5H1
(506) 453-2206

Nova Scotia

Department of Mines and Energy
Sir Joseph Howe Building
P.O. Box 1087
Halifax, Nova Scotia B3J 2X1
(902) 424-4161

Nova Scotia Resources Ltd.
1809 Barrington Street
Halifax, Nova Scotia B3J 3K8
(902) 429-2860

Novaco Ltd.
P.O. Box 147
Sydney Mines, Nova Scotia B1V 1Y3
(902) 736-6268

Newfoundland

Department of Mines and Energy
P.O. Box 4750
St. John's, Newfoundland A1C 5T7
(709) 737-2768

Northwest Territories

Energy, Mines and Resources Secretariat
Government of the Northwest Territories
Yellowknife, Northwest Territories X1A 2L9
(403) 873-7224

Yukon Territory

Economic Research and Planning Branch
Department of Tourism and Economic Development
Government of the Yukon Territory
Box 2703
Whitehorse, Yukon Territory Y1A 2C6
(403) 667-5470

THE AUTHORS

Margot Wojciechowski has a B.A. in Political Science and Economics from the University of Toronto (1958) and an M.A. in Political Studies from Queen's University (1970). Her professional experience includes three years as an economist with the Dominion Bureau of Statistics, and several research positions in the field of public administration. She is now assistant director of the Centre for Resource Studies at Kingston.

Mary Louise McAllister is a graduate of Queen's University, with a BA in English and a MA in Political Studies. She has worked as a research assistant in a number of policy areas at Queen's, including federal/provincial constitutional issues, Canadian intergovernmental relations, and British politics.

THE CENTRE FOR RESOURCE STUDIES

The Centre for Resource Studies (CRS) was established in 1973, under the sponsorship of Queen's University, the federal Department of Energy, Mines and Resources, and The Mining Association of Canada, to carry out a program of research and publication on mineral policy issues.

The Centre provides opportunities for multidisciplinary research in resource studies at Canadian universities, furnishes reliable information on matters related to mineral resource policy, and promotes closer liaison between government, industry and other concerned groups. The research program is carried out both at the Centre and by means of contracts with qualified investigators, usually at Canadian universities. Small exploratory studies are also funded, through a system of grants-in-aid of research. CRS Seminars involve representatives from governments, industry, universities, labour, and other interested groups in working sessions on issues of current concern. Through this program of research and seminars, and the resulting publications, the Centre contributes to informed discussions and a better understanding of significant issues.

The Centre is governed by a board of directors which establishes general policy and priorities for research. The board has sixteen members, appointed by Queen's University, The Mining Association of Canada, and the federal government. Guidance on the research program, together with discussion of policy issues and other matters, is provided by the Advisory Council. This body comprises all researchers associated with the Centre, together with members appointed from such groups as governments, industry, labour, and other interests. A Research Advisory Committee aids in the development of projects and the selection of research proposals. The executive director and staff are responsible for the work of the Centre within this framework.

Most of the funding for the Centre's activities is provided by two of the sponsors, EMR and MAC. In addition, the Centre accepts contracts from other organizations interested in mineral policy research.

The Centre welcomes comments on its publications, proposals for research projects or for publication, or enquiries about any aspect of its work. For further information, contact:

Centre for Resource Studies
Queen's University
Kingston, Ontario, Canada K7L 3N6
(613) 547-5957

CRS PUBLICATIONS

Monographs and Collections

Conflict and its Resolution in the Administration of Mineral Resources in Canada, by R.M. Burns; 62 pages, 11 tables. Published 1976.

The Impact of the Mining Industries on the Canadian Economy, by R.W. Boadway and J.M. Treddenick; 116 pages, 15 tables. Published 1977.

The Transportation Impact of the Canadian Mining Industry, by A.I. Wallace; 154 pages, 17 tables. Published 1977.

Human Resources in Canadian Mining: A Preliminary Analysis, by J.A. MacMillan, G.S. Gislason, and S. Lyon; 174 pages, 48 tables. Published 1977.

Health and Safety in the Canadian Mining Industry, by G.W. Gibbs and P. Pintus; 248 pages, 58 tables. Published 1978.

The Canadian Nonferrous Metals Industry: An Industrial Organization Study, by E. Urquhart; 158 pages, 18 tables. Published 1978.

Economic Impacts and Linkages of the Canadian Mining Industry, by P.E. Nickel et al.; 140 pages, 31 tables. Published 1978.

Environmental Impact of Mining in Canada, by E.A. Ripley et al.; 274 pages, 45 tables. Published 1978, reprinted 1982.

Effects of Taxation on Base Metal Mining in Canada, by B.W. Mackenzie and M.L. Bilodeau; 188 pages, 29 tables. Published 1979.

Gold: The World Industry and Canadian Corporate Strategy, by E. Cousineau and P.R. Richardson; 192 pages, 32 tables. Published 1980.

The Impact of Policy Change on Decisions in the Mineral Industry: The Case of Exploration in Manitoba, 1969-77, by B.E. Owen and W.J. Kops; 116 pages, 8 tables. Published 1980.

The Role of Mineral Taxation in Industry/Government Conflict: The Case of the Saskatchewan Potash Reserve Tax, by David L. Anderson; 135 pages, 41 tables, 2 illustrations. Published 1981.

Profitability in the Canadian Mineral Industry, by Charles H. Pye; 178 pages, 42 tables, 12 illustrations. Published 1981.

Foreign Investment Control in the Canadian Mineral Sector: Lessons from the Australian Experience, by David L. Anderson; 180 pages, 22 tables. Published 1983.

Financing Canadian Mining in the Eighties: Strategies for Action, edited by David Yudelman; with papers by B. Bradley, A. Dorland, J. Erola, P. Gillin, P. Glenshaw, S. Greenwald, B. Kalymon, P. MacCulloch, B. Mackenzie, K. Murphy, A. Powis, R. Sultan, and D. Yudelman; 240 pages. Published 1984.

National Resources and International Bargaining Power: Canada's Mineral Policy Options, by Patrick J. Caragata; 204 pages, 23 tables. Published 1984.

Proceedings

No. 1 Rate-of-Return Taxation of Minerals, with papers by B.W. Mackenzie and M.L. Bilodeau, P.M.T. White, N.D. Olewiler, J.T. Cawley, and E.P. Gush; 109 pages. Published 1978.

No. 2 International Competition and the Canadian Mineral Industries, with papers by H.C. Armstrong, H.T. Fargey, C.G. Miller, N.D. Olewiler and P.R. Richardson, D. Perlstein, and K.C. Hendrick; 109 pages. Published 1978.

No. 3 Current Concerns in Mineral Policy, with papers by C.R. Archibald, W.J. Barbour, D.B. Brooks, J.S. Dowsett, J.M. Fleming, and G.A. Jewett; 75 pages. Published 1978.

No. 4 Canada's Mineral Trade: Implications for the Balance of Payments and Economic Development, with papers by B.W. Wilkinson, D.J. McCulla, J.G. MacKinnon, A.G. Balogh, and W.G. Chambers and J.S. Reid; 113 pages. Published 1978.

No. 5 Employee Relations Initiatives in Canadian Mining, with papers by W.J. Bennett, F.R. Nogas and J.P. Fulcher, W.F. Clarke, S.B. Jones, T.F. Cawsey and P.R. Richardson, and P. Warrian; 85 pages. Published 1979.

No. 6 Junior Mining in Canada: The Problem of Investment and Securing Fair Returns, with papers by A.J. Freyman, B.A. Kalymon, J.D. Mason, D.W. Scrim, E.H. Neave and P.R. Richardson, and E.G. Thompson; 101 pages. Published 1979.

No. 7 The Future for Junior Mining in Canada, with papers by Hon. J.A.C. Auld, J.L.C. Lyndon, N.B. Keevil Jr., D.G.C. Menzel, H.T. Fargey, A.J. Freyman, Hon. R. Hnatyshyn, J.C. Baillie, D.W. Scrim, J.P. Bunting, E.H. Neave and P.R. Richardson, L.A. English, M. St-B Harrison, R.H. Grasley, and Hon. F. Drea; 125 pages. Published 1979.

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